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By ALFRED C. KINSEY WARDELL B. POMEROY CLYDE E. MARTIN
of Indiana University

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Volume 238 FEBRUARY 26, 1948 Number 9

INTERNAL PUBLIC RELATIONS*

JAMES RAGLAN MILLER, M.D.†

HARTFORD, CONNECTICUT

IN CONNECTICUT it is a custom for the principal officers of the Medical Society to attend each of the eight county medical association meetings. These occur twice a year, and although riding circuit is an arduous task, it is worth while in the interest of good internal public relations, for the members of the Society are considered the first public. At these meetings the members have a chance to tell the state officers what they believe is wrong and what they suggest should be done about it, and the officers on their part have an opportunity to interest the members, if they can, in the projects of the Society. I am sure that every well organized state society attends to this need in some manner.

I am glad to see developing the habit of having someone from the American Medical Association as a speaker at every state medical society meeting. When Dr. Metcalf was unable to obtain the speaker he desired for this occasion, he turned to me and I told him that I was glad to do what I could. Though I cannot deliver a brilliant oration or provide entertainment with wit and humor, I can perhaps convince you that the Board of Trustees is a very human group. It endeavors to be close to the individual members, and in carrying out the directives and operating under the policies laid down by the House of Delegates, it must at all times bear in mind the effect of its actions on the medical profession in America.

This opportunity allows me to express my high appreciation of the activities of the New Hampshire delegate, Dr. Deering Smith. Anyone who follows the transactions of the House of Delegates of the American Medical Association will learn firsthand the careful attention that is given to his wise counsel.

The aim of any public-relations program should be to promote favorable consideration by the public of the organization and of the product that it offers. The title chosen for this occasion emphasizes the importance of having a sound product, of ample production, and of having a well informed sales force. The cynic may question, "Why have a sales campaign?" And, indeed, it seems almost unnecessary to ask the public, which has had confidence in the profession for a hundred years or more, to think even more favorably of us. I do not propose to argue the needs of a positive campaign for public approval. It may be said, however, that there is a general opinion that the public holds the individual physician in high regard but is not so clear in its approval of the medical profession as an organization.

I believe that this criticism of organized medicine is losing its force. Most of the bitter criticism comes from those who wish to alter the basic structure of the whole American way of life. Suffice it to say that the House of Delegates has directed that positive steps be taken to place more effectively before the American people the accomplishments of the medical profession and its part in meeting the needs of the people for medical care. Anyone who went to the centennial celebration of the American Medical Association at Atlantic City must have had a feeling of pride as he saw demonstrated the important position that the medical profession occupies in the hearts and minds of the American people.

Today I shall consider some of the things that I believe we can do within our organization better than we have in the past so that our own members to the last man can be proud of the organization, and so that the profession itself may need less often to apologize or to give excuses for the action of any of its members. This is the area of internal public relations, which must be sound if we are to have healthy relations with the public at large.

The American Medical Association is a large federation of state organizations in which the county societies as the basic units occupy a conspicuous position of power and local responsibility. The complex problems and great responsibilities of large county associations whose membership runs into thousands will differ greatly from those handled with comparative ease by a small county association. The small society presents a special problem for its parent organization. For all practical purposes the

*Presented at the annual meeting of the New Hampshire Medical Society, Newcastle, New Hampshire, June 20, 1947.

†Visiting obstetrician and gynecologist, Hartford Hospital.

state society must function on its behalf and with its co-operation. On the other hand, a large county society may be led by reason of its size and power to usurp some of the legitimate functions of the state organization and to exert undue influence within the state society to the detriment of the small county association. We have had enough of jurisdictional disputes elsewhere, and we do not want them in medicine.

Within the profession there are also many local societies — academies of medicine whose primary interests are in developing scientific programs. Occasionally, a local group of physicians organizes for purposes of dealing with economic problems of practice, especially for the provision of medical care to indigent groups. These are useful and sometimes indispensable means for dealing with local problems that may be too small to be handled by a large county or state association, but all these developments should be made harmoniously if the public is not to be confused.

Hospital staffs also have meetings and develop educational programs for their members and for the physicians of the community. Here is the proper forum for presentation of clinical papers and case reports, which formerly contributed so largely to the programs of local societies. Again, specialists and many general practitioners are drawn to meetings of national and regional societies. All these programs, as a rule, are in the nature of postgraduate education, and have little to do with the economic, legislative or other activities that concern physicians most in their relations with the public. Great care must be taken that the county associations, which are the functional units of the medical profession, are not so starved that they do not perform the necessary social tasks expected of the profession. Perhaps the answer to this question is in the development of a stronger and better functioning state organization.

There is no doubt that the New England town meeting is one of the finest examples of democratic government. When, however, the town becomes too large, the town meeting has to give way to another form of government. The successful politician must remember that extraordinary effort is required to make up for the loss that the citizen feels when he no longer has his customary forum for making known his wants — the larger the organization, the more difficult it is to make up for this loss. These developments must take place without making the individual physician feel that he is remote from those who direct his affairs.

In spite of many distractions it has amazed me to see how much devoted service is given to organized medicine and to the mechanics of providing better facilities for physicians by the very men who are busiest. I have observed that the vast majority of so-called "medical politicians" have risen to their positions primarily because they are respected by their fellows as physicians. My first impression on beginning my duties as a delegate was one of admiration for a system that brought to the top so many physicians of high quality. The exceptions are conspicuous indeed.

During the war the staff at the American Medical Association headquarters was greatly depleted, and we are not yet fully caught up with our back work. That was part of the price we paid for the war, and it is a contribution of which every physician can be proud. It was inevitable that contacts between state societies and the American Medical Association during this period should have been deficient, and it was inevitable that criticism came from individual physicians who in their remote posts about the world had ample time to think upon the wrongs of the world in general and organized medicine in particular. Most physicians on sober reflection, however, will understand the situation. I am glad to report that the staff is now being filled with competent men who, under the direction of the Board of Trustees, are pursuing a program to develop the responsibilities of the profession to the public and also to develop more intimate and frequent contacts with the members who carry on the burden of state and county activities.

One of the means developed to bring the Association closer to the individual member was the so-called "Grass Roots Conference" at Atlantic City, where county officers had a meeting of their own and a chance to discuss the problems that concerned them.

The American Medical Association is also assisting in the development of regional conferences attended by the responsible officers of the state societies in that particular region together with members of their important committees. I believe it was Dr. Fishbein who once said that the burden of organized medicine is carried by about 3000 physicians in the United States. These are the men who make up these conferences. Not only are there discussions of problems that are of interest to the members but also officials of the American Medical Association are present to report to them and to learn from them, for this is a two-way affair. In New England we have gone still farther, as you know, by the organization of the Council of the New England State Medical Societies. This council meets three or four times a year, and since it consists of only three or four delegates from each state society, it is small enough to come to grips with the problems that are of peculiar interest to us in New England.

The productive life of a state society as an organization is most often found in its strong and active committees. These committees interest themselves in medical-care plans, legislation, care for the chronically sick, cancer, public health and hospitals — subjects that vitally affect relations with the public.

I recommend the institution of a program that we have found effective, and one that immeasurably increases the vitality and significance of these committees. At present in Connecticut there is scarcely a board or commission that has to do with health or welfare on the state level to which there has not been added a carefully chosen member of the Society. This is effective not only in keeping the Society informed and in representing the Society's interest but also in revealing ways and means whereby organized physicians may exert necessary leadership in a field that it is their obligation to develop. Members of these commissions lend weight to the deliberations of their committees.

The late George Vincent once said in explaining why Denmark had such an excellent health situation: "In Denmark every health officer is a physician and every physician is a health officer." I firmly believe that that is a desirable aim for the medical profession in the United States. We must develop a keener appreciation of our position of public trust. We must accept even more fully the obligation that goes with the trust. This is easily understood by the physician who works alone or with a few others in a small community where he has intimate contact with his chief selectmen and with the overseer of the poor, the chief of police and so forth, and perhaps he may occupy the post as local health officer. It is difficult, however, for the physician who lives in a large city to sense his public responsibility. At best he must express himself vicariously by means of the officials of his medical society, but it is his duty to see that his society fulfills its obligation in this regard, and if young men at the beginning of their professional lives do not see the example of their elders, they too will develop habits of indifference.

I recommend for consideration the advantages of developing a student membership in the state society. We have done this in Connecticut and have found it productive of good will among the young physicians. Unfortunately, medical students are likely to hear much of the alleged advantages of socialization of medicine by physicians who themselves have not indulged in personal medical practice. On the other hand there are few opportunities for them to hear what organized medicine is doing and can do for society.

I know that you have no medical school, but some of your New Hampshire boys are studying medicine elsewhere and are going to come back to be future members of this society, and you have interns and residents in your hospitals. I suggest that you concern yourselves with what they are thinking. Find out who they are and where they are studying and let them know that your society is interested in their welfare. Our student members, who now number 350, are very grateful for the copies of the *Connecticut State Medical Journal* that we send them.

The following arrangement has been found productive in Connecticut. About six years ago the Connecticut Medical Examining Board, members of which are appointed by the Governor on nomination by the state society, foresaw the advantages of a close alliance between the Society and the Board, and as a result the executive secretary of the Society became the secretary of the Examining Board. This arrangement provided full-time administration for the Board as well as for the Society, and every prospective candidate for medical licensure came to the Society's office for his first contact. Dr. Barker, in his annual report to the Connecticut House of Delegates, made the following statement:

> The good effect of this system cannot be measured. Most of the candidates come to the office for interviews and information and it is a surprising but none the less true observation that these physicians newly come to our state are more familiar with the activities and services of the Society's office than are many members of the House of Delegates. It is common for these candidates to ask even before they are settled here how they may become members of the Society, either by transfer or election. All this is a privilege and an advantage that I believe no other state society enjoys and is the outcome of far-sighted planning.

The advantages of this relation were even more apparent during the war when the executive secretary, Dr. Barker, was also the state chairman for the Procurement and Assignment Service. The result has been that the files in the office of the Society are not only complete but also official. We plan to have our physicians with us from the cradle to the grave.

Most of us, I believe, are out of sympathy with those who criticize national foreign policy before foreign audiences, and most physicians have little regard for would-be medical statesmen who attempt to bring pressure on organized medicine by arguing their ideas before lay audiences. With rare exceptions these dissident physicians have not participated as active members in the ordinary work of medical societies. They have rarely presented their arguments successfully before the organizations of medicine, and few of them have ever practiced individual medicine, which they so freely criticize. A reasonable opportunity should be given such persons to present their ideas before medical societies and to subject themselves to the discussion of the facts of life of medicine. I am sure that it would do them good.

What about the "lone-wolf" member who never comes to medical meetings? What about the occasional member who stays within the letter of the law, overcharges the poor and skates on the thin ice of professional respectability? I am sure that such members are few in number, but one bad apple has an effect on the whole barrel, and the adverse publicity caused by one unscrupulous physician brings the whole profession into disrepute. Some laymen believe that this is the most important item on the medical society's agenda. They point to the reluctance of physicians to bring to book a fellow member. This reluctance, they say, gives relative immunity to this sort of racketeer. The layman

points out that disciplinary action can be undertaken effectively only by the medical profession itself and that the legal profession has devised a powerful grievance committee to process complaints of unprofessional conduct against any lawyer. He will often add that the committee is not called on as often as he would like to have it, but it is there and no lawyer relishes a summons to appear before it; perhaps the grievance committee was devised because a lawyer on being admitted to the bar becomes an officer of the court, and since the court is sensitive to any unprofessional action, the bar association itself undertakes to discipline its own members.

Medical-insurance plans have extended their benefits widely as in New Hampshire and many other states. There develops a need for handling complaints that may originate with the medical-insurance administration, with the individual physician or with the individual patient. Every so often the "lone wolf" has to be trapped and has to be tamed. I am told that the grievance-committee mechanism works well when it is set up and used, and the very fact that it is there has a restraining influence.

When plans for prepaid medical service in Connecticut were being discussed, I pointed with pride to the experience in New Hampshire with the indemnity type of contract and explained that, although there was no written agreement, the indemnity payments actually constituted a fee table for the indigent — that is, a gentleman's agreement that the table would be sufficient without further charges when the family income is low. One of our cynical businessmen remarked that such an arrangement might work well in New Hampshire but not in Connecticut. I granted the New Hampshire part of the statement but was inclined to resent the implication that Connecticut waters were infested with sharks, until he told us of a man in his employ whom the physician charged inappropriately considering his reduced circumstances. I am a good organization man and I shall always defend another physician so long as I am convinced of his integrity and fair dealing, but I deeply resent actions that give physicians a bad name by causing hardship to a poor patient and I therefore recognize that proper policing of our own membership is one of our major responsibilities. This is a job that must be done with fairness and firmness, and with rare wisdom, and it is a job that falls naturally on the shoulders of the elders. I am glad to talk freely about self-discipline before a state society that needs it less than any I know, but I do not doubt that even you will have some experiences with shark fishing.

The ten-point health program of the American Medical Association is a fine statement of practical idealism. Parts of this program are already being put in motion by organized effort, but like the Ten Commandments many elements of the program depend upon personal integrity in the daily life of every physician. Effective public relations come from within. Our own members are our first public.

179 Allyn Street

POSTARSENICAL ENCEPHALOPATHY IN THE TREATMENT OF SYPHILIS IN WOMEN*

S. Charles Kasdon, M.D.,† and Morris W. Shapiro, M.D.‡

BOSTON

AT LEAST 60 per cent of adults receiving arsenical antisyphilitic therapy who develop postarsenical encephalopathy are pregnant women. The mortality in this most serious complication in the treatment of syphilis approaches 70 per cent. Postarsenical encephalopathy, the term considered most apt, has also been described under the following titles: cerebral purpura, serous apoplexy, hemorrhagic encephalitis, pericapillary encephalorrhagia, medullary perivascular necrosis and toxic encephalitis.

There is a widespread lack of familiarity with this cause of death in 1.3 per cent of the total number of patients treated by the massive five-day arsenical course.[1] Postarsenical encephalopathy was the cause of 9.5 per cent of 211 maternal deaths in Arnell and Guerriero's[2] series, 2.7 per cent of maternal deaths in Kennedy and Hennington's[3] group and 8 deaths in five years at the University of Iowa clinics.[4]

This paper reports 2 fatal cases of postarsenical encephalopathy, 1 in pregnancy, with autopsy findings in both, and also presents several new factors in its management. These new developments are important in spite of the recent advent of penicillin therapy for syphilis, since there is little question that many patients receiving antisyphilitic therapy will be dependent upon arsenicals for some time to come.

Symptoms

The clinical picture that is characteristic of this syndrome is most conveniently described by a noso-

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graph suggested by Kühnel.[5] The patient is a young woman, usually pregnant, and generally with a past history of good health except for the presence of syphilitic infection. The disease is often of fairly recent origin or, in any case, manifest by recent signs of active infection. It may, however, be a latent infection, generally untreated previously and with very little evidence of syphilis except for the positive serologic findings. Antisyphilitic treatment is begun in the last trimester of pregnancy with arsphenamine or one of its related drugs, with two to four injections of average dose, and the patient may lack symptoms for two to five days. Many patients have transitory but intensely significant complaints, such as slight headaches, nausea or vomiting, or both, general indisposition, restlessness and, rarely, a rapidly fading exanthem, after which there is a rather sudden onset of headache, dizziness, malaise, nausea and vomiting with a moderate leukocytosis. Within twenty-four hours marked restlessness ensues, with mental confusion followed by an irregular number of convulsions and coma. At this stage the patient is taken to the hospital with a diagnosis of eclampsia. Later — from a few hours to one day — irritative cerebral symptoms become more pronounced, including trismus, tetany, accentuated reflexes, a positive Babinski sign and the irregular respiratory phase of Cheyne–Stokes type. Death follows deepening coma. In most cases death occurs three to five days after the acute onset.

Incidence

It was scarcely two years after the introduction of arsphenamine in the treatment of syphilis by Ehrlich when hemorrhagic encephalitis as a toxic manifestation of this therapy was reported.[6–9] The literature since that time has had many reports dealing with the most frequent cause of death in the treatment of syphilis.[10] Glaser, Imerman and Imerman[11] (1935) reviewed the literature and culled 155 cases, adding 3 of their own. Smith and Newbill[12] found 17 more to report by 1939. Since that time a review of the literature available from 1939 to 1946 has offered 88 new cases.[13–40]

The incidence of arsenical encephalopathy in patients treated for syphilis by the multiple-course method is variously quoted as 1:2500 cases,[17] 1:6500[11, 14] and 1:2000.[19] That arsenical encephalopathy occurred with greatest frequency in pregnancy has only recently been appreciated. In 36 reported cases of encephalopathy in adult women studied in the literature from 1939 to 1946, 27 (75 per cent) were pregnant. This shows close agreement with the incidence during pregnancy of postarsenical encephalopathy in the reports of Ingraham[39] (64.3 per cent), Meirowsky and Kretzmer[41] (60 per cent), Cormia[42] (80 per cent) and Paley and Pleshette[40] (70 per cent). Arnell and Guerriero[2] reported that fatal arsenical encephalopathy is four times more frequent in pregnant than in nonpregnant women.[43–51]

In spite of the wealth of evidence that the treatment of syphilis in pregnant women should be undertaken with grave circumspection and only when clearly indicated, conflicting views still exist in the attitude of syphilologists and even more so in the minds of obstetricians, upon whom the responsibility for treatment rests primarily. For it is the obstetrician who almost universally discovers the presence of syphilis in pregnant women and must decide whether treatment is warranted or not. Some writers convey the impression that pregnant women with syphilis tolerate arsenical therapy well.[52, 53] However the general consensus contradicts this attitude. The most acceptable impression, as stated by Plass and Woods,[4] is that "a pregnant woman is probably more susceptible to the deleterious as well as the beneficial effects of modern arsenical therapy."

Pathogenesis and Etiology

That typical lesions are not entirely dependent upon arsenicals has been demonstrated by reports of cases in which no arsenic has been administered.[54–56] The overwhelming number, nevertheless, follow the use of pentavalent arsenic.[43] An unusually high frequency has been noted after the administration of sulfarsphenamine,[21, 57–59] resulting in almost complete condemnation of its use.

Mapharsen is now employed almost universally in the massive five-day course[60] and other accelerated arsenical courses in the treatment of syphilis, but the incidence of severe central-nervous-system reactions remains at 1 per cent or more and the mortality from complications of therapy at 0.3 per cent.[24] It is obvious that when this relatively high incidence of severe toxic reactions in the accelerated arsenical therapy of syphilis is considered together with the increased susceptibility of patients with ante-partum syphilis, the cautious therapist should hesitate to subject his pregnant patients to the dangers of encephalopathy.

A clear statement of the mode of action whereby arsphenamine therapy results in encephalopathy was presented by Ehrlich[61] in 1914. He concluded that the mechanism was first a dilatation of the cerebral vessels followed by edema and perivascular hemorrhage. More recent studies[11, 20, 32, 62] cling to this basic theory of development. Deficiency of vitamin C[63] and P[64] may play a part, but the production of typical lesions in the brain of normal rabbits with an adequate vitamin intake[65, 66] throws doubt on these factors. The theory of the relation between nitritoid crises and vascular damage leading to cerebral edema is open to the objection that nitritoid crises have yet to be demonstrated in Mapharsen therapy.[27] Sulzberger[67] and later Moriyama,[68] using patients' serum, were able to transfer arsenic sensitivity to guinea pigs. Landsteiner and Jacobs[69] demonstrated arsenic anaphylaxis in guinea

pigs. However, Gjessing[70] questioned whether arsenic sensitivity was the cause of the encephalopathy, since he reported a patient who recovered from typical clinical postarsenical encephalopathy and who received treatment with neoarsphenamine six weeks later with no untoward results. Klaften[44] corroborated this finding. In addition, a large number of cases have followed only one known arsenical injection. Tzanck and Lewi[43] rule out the Herxheimer augmentation of the virulence of the spirochete through treatment employed to combat it, since hemorrhagic encephalopathy has been too widely reported in nonsyphilitic patients. Osterberg and Kernohan[71] found arsenic in relatively large amounts in the brain analysis in doubtful diagnostic problems, as did Gierlich and Künkele.[72]

The explanations offered for the especially increased incidence of postarsenical encephalopathy in pregnancy are likewise many.[73] Arnell and Guerriero[2] believed that the increased incidence in pregnancy was explained by the greater storage of arsenic in the placenta that had been demonstrated by Eastman and Dippel.[74] This was gradually set free in the blood over a period of several days, thus increasing the circulating amount of arsenic. Pregnancy presumably produces a degree of capillary alteration that is further aggravated by the action of arsenic on the capillaries, resulting in the toxic phenomena.[46, 75] Excessive protein deficiency in pregnancy suggested as a predisposing cause is not conclusive, since many have noted that a large number of women with ante-partum syphilis and many with marked debility and toxemia have been treated with arsenic without a noticeable increase in the development of encephalopathy in this group.

Treatment

The management of acute postarsenical encephalopathy in pregnancy can best be approached from the prophylactic or preventive standpoint, secondly, the major principles of treatment and thirdly, the specific agents that are of value in the management of the acute toxic state.

Preliminary treatment with bismuth or mercury compounds has no effect whatsoever in preventing encephalopathy during gestation. The dosage level of the arsenical used is also of undetermined importance,[12] since many cases follow very small quantities of arsenic. The undeniable increase in frequency of this complication during the massive five-day course of arsenical treatment in syphilis tends to direct more interest toward the amount of arsenical administered. It is therefore believed that minimal dosage levels are to be preferred. The essential fact that positive and unequivocal evidence of syphilis in pregnancy must be obtained before arsenical therapy is undertaken deserves great stress. In the light of modern opinion, ante-partum treatment with arsenic for syphilis is not necessary when adequate therapy has already been administered. The concept that patients in the last trimester of pregnancy are more susceptible to encephalopathy is probably due to the fact that in the past the greatest number of patients were not seen by the physician until late in pregnancy. Actually, encephalopathy has been described in all but the first month of gestation. In the series of 50 cases collected from the literature of the past ten years the average duration of pregnancy was five and four-fifths months. It is certainly likely that the date of onset of treatment is more important than the "metabolic overload" that occurs at the end of pregnancy. It is also certain that the arsenical treatment of pregnant women who have a history of sensitivity to arsenic or other metals is at best hazardous. Penicillin is unquestionably the drug of choice, since encephalopathic changes have yet to be reported in the treatment of syphilis with penicillin.

The major principle of treatment for this toxic reaction is also clear. There is little question that therapy is more effective if instituted before the onset of coma and convulsions. It is possible to start treatment before the severe symptoms develop, since the prodromal signs of slight headache, nausea or vomiting, or both, generalized indisposition, restlessness and the relatively infrequent exanthem usually precede the onset of convulsions and coma by one or two days. If the physician is aware of these significant but mild signs of warning following the administration of arsenicals the prompt institution of adequate treatment before coma and convulsions ensue is at present the only means of reducing the mortality from this complication in the treatment of syphilis with arsenicals.

The intramuscular administration of adrenalin hydrochloride in a 1:1000 solution in repeated dosage has long been in favor. The rationale for its use has been presented above, but in spite of the proclaimed specificity of adrenalin-like substances, the mortality has remained high. Much stress has been placed on the thiosulfates in the treatment of arsenical toxicity, but it is generally admitted that their action has a very slight and definitely questionable value. The long list of additional drugs and vitamins that have been used, such as sodium dehydrocholate, calcium chloride, numerous sedatives, magnesium sulfate, components of the vitamin B complex, acetylcholine, vitamin K, vitamin C and vitamin P, has not appreciably altered the course of the disease. Perhaps as great stress has been placed on reducing the tendency to cerebral edema by means of hypertonic solutions and especially by spinal-fluid drainage. In fact, Ransome et al.[1] kept all their patients in the erect sitting position throughout the whole course of treatment and reported no mortality in the 5 cases studied. Their explanation for the effectiveness of this technic is fallacious since the reduction of cerebrospinal-fluid pressure and cephalic venous pressure, which they claim as the cause of improvement, can at best

have been very transitory. In view of their reported results, however, additional evidence for the efficacy of the postural treatment is awaited.

Much more important is the newly introduced drug BAL (2, 3-dimercaptopropanol),[76–78] a specific detoxifying agent for arsenic, mercury, gold and other heavy metals when injected intramuscularly or intravenously. The antidotal action of BAL is due to its ability to remove arsenicals from combination with the tissue-cell proteins with the excretion of a stable and relatively nontoxic substance. The dosage of BAL (10 per cent solution in peanut oil with 20 per cent benzyl benzoate) is 2.5 to 5 mg. per kilogram of body weight, injected four times daily at four-hour intervals the first two days and then twice daily thereafter for six or more days. The maximum tolerated divided dose in rabbits is 100 mg. per kilogram of body weight. The major reactions to BAL are "constriction in the throat," presternal oppression, burning of the lips, lacrimation, dryness of the mouth, local tenderness at the site of injection, nervousness, restlessness, nausea and vomiting. No severe toxic reactions have thus far been reported.[79] Eagle and Magnuson[78] presented 55 cases of postarsenical encephalopathy out of 227 toxic reactions to antisyphilitic therapy that were treated adequately with BAL. Of these, 24 patients developed coma or convulsions, or both, with a mortality of 25 per cent, when treated within six hours of the onset of symptoms. Those treated later than six hours after the onset of symptoms had a mortality of 45 per cent. In 15 mild cases, there was 100 per cent survival. The authors report an over-all reduction of mortality from 70 per cent to 11 per cent by the use of BAL. It promises to be of the greatest value in the management of the most severe toxic reactions to arsenic. A high-protein, high-carbohydrate and low-fat diet is advisable as well.

Case Reports

Two young women with asymptomatic syphilis came to post-mortem examination after neoarsphenamine treatment. These therapeutic deaths occurred within a six-month period. One of these women was pregnant.

Case 1.* V. W. (C. H. A–42–44), a 34-year-old woman, became pregnant for the first time after treatment for infertility. She was 2½ months pregnant when first seen. The past history and family histories were completely irrelevant, and examination at that time revealed no abnormalities of moment. A routine specimen submitted for examination showed a positive blood Hinton test. This was repeated, as well as a Wassermann test, and all reports were returned strongly positive. Blood examination, physical examination and a careful review of the husband's history failed to reveal any evidence of syphilis in him. Routine premarital blood examination 2 years earlier had been reported negative. The patient was referred to a competent syphilologist for further diagnosis and suggestions for management. She received 0.2 gm. of bismuth at weekly intervals for 6 weeks without reaction and then was started on neoarsphenamine. The first dose of 0.3 gm. was given 10 days, and the second dose 3 days before admission. On the day she received the second dose of neoarsphenamine she also made a routine visit to her obstetrician who found a blood pressure of 100/70; the urine contained no albumin, and there were no toxic signs or symptoms. For the next 2 days, the patient had headaches, epigastric distress, unusual restlessness, massive gaseous eructations, chilly sensations and no bowel movements. On the 3rd morning she was found lying in bed in a semicomatose state, with frequent bouts of stertorous breathing, repeated extensor tonic convulsions at intervals of 5 to 8 minutes, excessive salivation and moderate generalized cyanosis. The convulsions lasted about 40 to 60 seconds, the patient remaining semicomatose between seizures. The physician who was called in to see her believed that she was suffering from eclampsia, and the patient was admitted to the hospital on October 19, 1942.

*Reported through the courtesy of Dr. L. E. Phaneuf.

Figure 1. *Coronal Section through Cerebral Hemispheres (Case 1).*

Note symmetrical distribution of petechial hemorrhages, confluent in areas and confined for the most part to the white matter. The corpus callosum and the internal capsule show marked involvement.

Physical examination revealed an acutely and seriously ill woman, who was having convulsions lasting 1 or 2 minutes and occurring every 5 to 8 minutes, with extensor spasm of both arms and legs, a moderate degree of opisthotonus, stertorous breathing, excessive salivation and moderately severe cyanosis. She did not respond to commands. The deep reflexes were hyperactive, and the Babinski reflexes extensor in nature.

The temperature was 98.6°F., the pulse 96, and the respirations 36; the blood pressure was 84/50.

Examination of the blood disclosed a red-cell count of 3,520,000, with a hemoglobin of 78 per cent, and a white-cell count of 20,800, with 90 per cent neutrophils, 6 per cent lymphocytes, 2 per cent monocytes and 2 per cent band forms. The blood Hinton reaction was ++++. The nonprotein nitrogen was 22.4 mg. per 100 cc. Blood culture showed no growth. Urinalysis was negative.

The convulsions were controlled with 0.016 gm. of morphine sulfate, and 0.2 gm. sodium luminal intravenously. A total of 500 cc. of 10 per cent glucose in water was given intravenously.

A lumbar puncture was performed, and the spinal-fluid findings were as follows: 101 white cells and 109 red cells per cubic millimeter; a total protein of 300 mg., and a sugar of 51 mg. per 100 cc.; and a chloride of 900 milliequiv. per liter. A direct smear revealed 60 per cent polymorphonuclear leukocytes and 40 per cent lymphocytes; no organisms were seen. The spinal-fluid Wassermann reaction was negative.

The diagnosis was toxic encephalopathy of undetermined nature following arsenical therapy. In spite of the control of convulsions by adequate sedation, the patient's course was rapidly downhill, and she expired 22 hours after admission.

At post-mortem examination, which was performed 2½ hours after death, the outstanding gross findings were seen in the brain, which was heavy and weighed 1525 gm. There was no epidural or subdural hemorrhage. The pia-arachnoid was transparent, and its vessels were congested. It was hemorrhagic over the pons and the medulla. Multiple sections revealed innumerable capillary hemorrhages, confluent in areas, symmetrically distributed throughout the white matter of the brain. Softening and necrosis was most marked in the pons, medulla, cerebral peduncles, the corpus callosum, and the internal and external capsules (Fig. 1 and 2). The vessels throughout were congested, and the cut surface was moist. The ventricular system was intact and regular and contained cloudy cerebrospinal fluid. The cervical cord was free of disease.

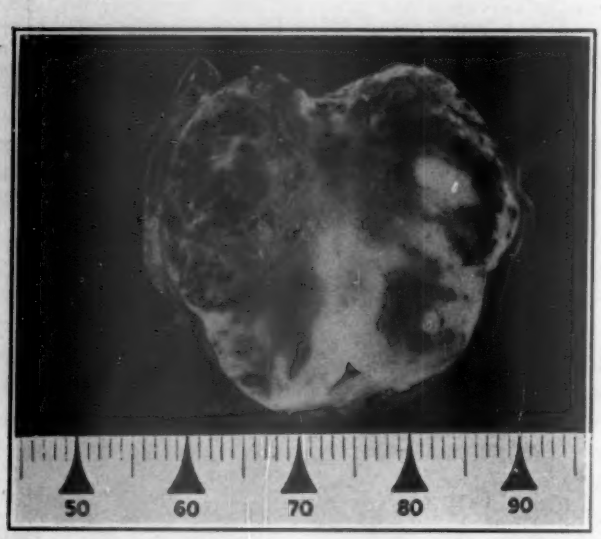

FIGURE 2. *Section through Pons (Case 1). Note confluent areas of hemorrhage, with softening.*

The remainder of the organs of the body showed severe congestive changes, the typical findings of pregnancy and terminal cardiac failure. There was severe passive congestion and central necrosis in the liver.

Microscopically, the brain showed two basic lesions: punctate and ring hemorrhages, with injury of the capillary walls, and often secondary mural and obstructing thrombosis. In areas there was beginning secondary infarction of the brain tissue.

The second case, although not that of a pregnant woman, is included because of its similarity to the first in other respects.

CASE 2.* H. G., a 31-year-old woman was known to have had syphilis for the past 10 years. She had one child 9 years old, who was living and well. Because of a persistently positive blood Hinton test, she was started on treatment for tertiary asymptomatic syphilis at the Outpatient Department on August 1, 1941 (Table 1). On April 15, 1943 (15 days after the last dose of neoarsphenamine), she suffered the sudden onset of severe headaches followed in 6 hours by tonic convulsions and loss of consciousness. She was admitted to the hospital on April 15. At that time the extremities were spastic and the reflexes hyperactive, and she was in a comatose state. The temperature was 98°F., the pulse 88, and the respirations 16. The blood pressure was 140/70. The white-cell count was 13,500, and the red-cell count was 4,150,000. The urine was negative for albumin and sugar. The blood nonprotein nitrogen was 25 mg. per 100 cc. A

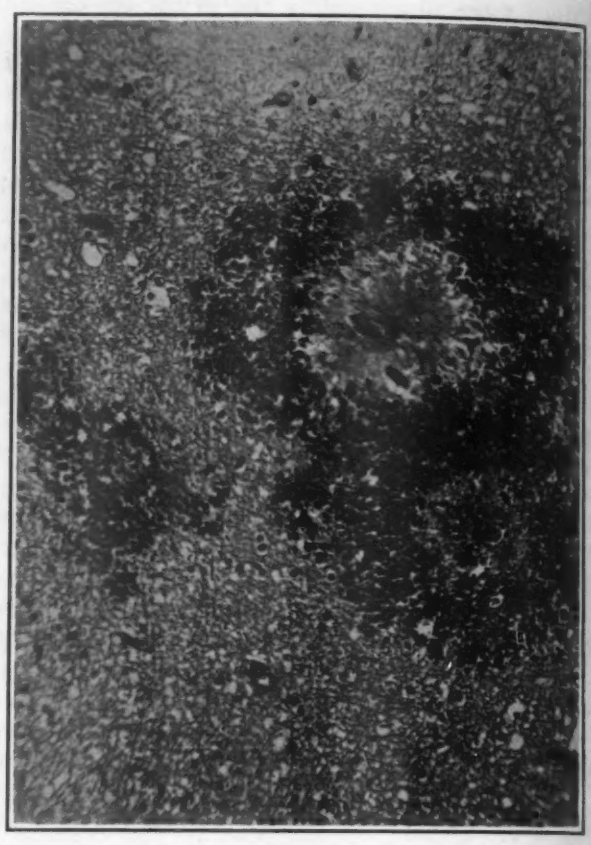

FIGURE 3. *High-Power Photomicrograph (Case 2), Showing Hemorrhages of the Ring-and-Ball Types with Fibrin Thrombi in the Lumens of the Blood Vessels.*

TABLE 1. *Treatment Given in Case 2.*

TREATMENT	DOSAGE	PERIOD OF THERAPY	BLOOD HINTON REACTION	TOXIC REACTION
Bismuth salicylate*	100 mg.	8/1/41–11/1/41	Positive	None
Mapharsen*	0.05 gm.	11/7/41– 2/5/42	Positive	None
Bismuth salicylate*	100 mg.	2/20/42– 6/5/42	Positive	None
Mapharsen	0.06 gm.	6/12/42	Positive	None
Neoarsphenamine	0.25 gm.	6/16/42	—	None
Neoarsphenamine	0.45 gm.	6/23/42	Doubtful	None
Bismuth salicylate*	100 mg.	6/23/42–Dec., 42	Doubtful	None
Neoarsphenamine*.....	0.25–0.45 gm.	1/6/43–3/31–43	Negative	Toxic encephalopathy (April 15, 1943)

*Given each week for period indicated.

*Cambridge City Hospital Case A-43-20.

lumbar puncture revealed clear spinal fluid under increased pressure. There were no cells present. The total protein was 56 mg. per 100 cc. The gold-sol curve was 0000000000.

The patient died on the following day.

A post-mortem examination limited to the head was performed* 2 hours and 20 minutes after death. The brain weighed 1250 gm. The white matter of the corpus callosum, the subcortical white matter of the hemispheres and the white matter of both internal capsules were riddled with innumerable fresh capillary hemorrhages. There were capillary hemorrhages into the ependyma of the lateral ventricles, with slightly blood-tinged fluid in the lateral ventricles. These hemorrhages were symmetrically distributed. The cerebral peduncles, the pons, the medulla and the cervical cord were free of disease. Microscopically, the brain showed two basic lesions: punctate and ring hemorrhages, with injury of the capillary walls, and often secondary mural and obstructing thrombosis (Fig. 3) and thrombosis of the capillaries without hemorrhage, but with beginning secondary infarction of brain tissue.

It appeared that as a result of changes in the vessel wall hemorrhages or thrombosis, or both, resulted. The dura showed vascular changes, with bleeding, similar to those in the brain.

Discussion

Postarsenical encephalopathy due to neoarsphenamine is a well recognized clinical and pathologic entity. The disease is infrequent, occurring in about 1:6500 cases treated, and generally runs a rapidly fatal course, although recoveries have been reported in the literature. The average time of onset of symptoms after the last injection of neoarsphenamine is about two and a half days. In the cases reported above it was three days in Case 1 and fifteen days in Case 2. The usual number of injections previous to the onset of symptoms is two or three. In Case 1 it was two, and in Case 2 it was twenty-three injections.

Case 1 was in all respects typical of cases observed during pregnancy. The disease usually occurs during the last trimester of pregnancy in patients showing asymptomatic syphilis discovered on serologic examination. The onset early in the first course of injections of neoarsphenamine is common.

The convulsions occurring in the last trimester of pregnancy naturally bring forth a diagnosis of eclampsia on the part of the physician. However, the following differential points are present: a positive history of arsenical treatment, usually within three days; no hypertension; no albuminuria; no edema; and no toxic symptoms. The course is rapidly downhill, death occurring in two or three days in 70 per cent of cases until the advent of BAL as a specific detoxifying agent for arsenic.

The lesions in the brain in Case 1 were very extensive and involved the vital medulla. The liver cells also showed destructive changes, a rather unusual finding in postarsenical encephalopathy.

Case 2 was less typical so far as the number of injections and the time elapsing from last injection to onset of symptoms are concerned. The course of the disease and the autopsy findings were quite typical. The pathologic changes in the brain consisted of swelling of the endothelial cells of the capillaries, congestion of vessels and edema of the brain; punctate and ring hemorrhages symmetrically distributed; thrombosis of the capillaries (fibrin thrombi); and infarction of brain tissue.

The pathogenesis of this disease is not entirely clear. Many theories have been offered to explain it. It appears, however, that the arsenicals are responsible in setting off a series of events that frequently culminate in the death of the patient. The first is definite damage to the walls of the capillaries, which is followed by hemorrhage of the ball-and-ring type and by thrombosis. Subsequently, the brain areas involved undergo infarction, with necrosis of brain tissue. The damage to the vessel walls is thought to be on the basis of allergy or sensitivity, in some manner greatly accentuated during pregnancy.

For the treatment to be effective, this condition must be recognized in the first few hours after the onset, and treatment promptly started. Therapy should include sedation and, most important of all, adequate and early administration of BAL; adequate treatment succeeds in lowering the over-all mortality rate from 70 to 11 per cent. The single most essential fact in control of this serious complication of syphilitic treatment with arsenicals is the application of therapy before the onset of coma and convulsions. It is possible to start treatment sufficiently early if one is aware of the prodromal symptoms that precede the onset of coma and convulsions. The most significant symptoms are headache, epigastric distress, restlessness and nausea or vomiting, or both. The use of penicillin as the drug of choice in the treatment of syphilis during pregnancy may prove to eliminate encephalopathy entirely and is therefore recommended. The use of intravenous arsenicals during pregnancy for any disease but syphilis should be condemned. Similarly, the diagnosis of syphilis should be unequivocably established and treatment clearly indicated before arsenical therapy is undertaken. The specific detoxifying agent for arsenic, BAL, deserves a wide use in the control of this complication.

*Autopsy was performed by Dr. H. E. MacMahon.

Summary

The cases of 2 young women with asymptomatic syphilis who came to postmortem study after neoarsphenamine treatment are presented. These deaths due to therapy occurred within a six-month period. One of these women was pregnant and near term.

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MENINGOCOCCAL PNEUMONIA*

Report of Two Cases with Meningococcal Effusion in One

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WITHIN a period of a month in 1942, 2 cases of pneumonia in which the meningococcus was implicated, without meningeal involvement, were observed. It has been known for some time that extrameningeal meningococcal infections are not uncommon,[1] but the attention directed to the respiratory phase of such infections is very scant. In view of the uniqueness of one of the cases observed and because of the lack of recent literature on the subject, it seemed worth while to report the cases and briefly to review the literature. The fact that most of the cases previously reported involved military personnel in World War I also affords an opportunity to review similar experience in World War II.

CASE REPORTS

P. C. (B.C.H. 1088509), a 56-year-old man, entered the hospital on November 24, 1942, because of chills and fever, cough and vague chest pain of 4 days' duration. Physical examination revealed moist rales in the right axilla, and a roentgenogram on the day of admission was reported as showing pneumonia of the right middle lobe. A blood culture taken before exhibition of sulfadiazine revealed a growth of Type 1 meningococcus. Neufeld typing of the sputum was reported as negative.

On sulfadiazine therapy from November 24 to 30 the patient made an uneventful recovery. A repeat x-ray film on December 3 was reported as being within normal limits. The white-cell count dropped from 14,100 on entry to 9150. Blood cultures on November 29 and December 7 revealed no growth, and the patient was discharged on December 10.

In this case of pneumonia routine blood cultures showed a growth of Type 1 meningococcus. Since Neufeld typing of the sputum was negative for both the pneumococcus and the meningococcus the evidence that the pneumonia was meningococcal in origin is indirect but warrants attention. The response to sulfadiazine was characteristic of that expected in either pneumococcal or meningococcal infections and did not resemble the response of pneumonias of virus etiology.

L. L. (B.C.H. Case 1090910‡), a 53-year-old baker's helper was admitted to the hospital on December 21, 1942, with complaints of pain in the left side of the chest of 3 days' duration, hemoptysis of 3 days' duration and rash on the legs of 1 day's duration. For the past 2 weeks the patient had had a "heavy cough" and had expectorated slight amounts of mucoid sputum, which was occasionally blood streaked. Although not feeling too well, he had been able to work "nearly" every day. However, 3 days prior to admission, he noticed a sharp pain in the left midaxillary region, accentuated on deep breathing and coughing. Expectoration of thick rusty sputum was noted on the same day. The symptoms became increasingly severe. On the day before admission, a chill and fever were noted, and, for the first time, a red rash was seen on both lower extremities. The skin lesions were not painful, itchy or raised above the skin surface. The patient denied any previous similar manifestations.

The patient was unmarried and had been on relief for many years. He was a known chronic alcoholic of many years' standing. At the age of 20, he had had a penile sore and had been told that he had "bad blood" many years before the present episode.

In January, 1938, he had been seen in the Outpatient Department for shortness of breath. A positive blood Hinton test was noted. Physical examination showed an aortic diastolic murmur, and the diagnoses of late latent syphilis, syphilitic heart disease with aortic regurgitation and generalized arteriosclerosis were entered in the record. A 7-foot roentgenogram of the chest revealed widening of the ascending and descending aorta, raising the question of aortic aneurysm. After a few intramuscular injections of bismuth in oil had been given, the patient absented himself from the clinic.

Physical examination disclosed a markedly dyspneic, poorly nourished man who grunted with every respiration. The face was flushed, and dilatation of the alae nasi was noted. Over the thighs, feet and legs, there was a petechial rash, the lesions being pin-point to 3 mm. in diameter; some were discrete, and others confluent and did not blanch on pressure. The teeth were in very poor condition, but the gums were firm and no bleeding was noted. The neck was supple, and Kernig and Brudzinski signs were absent. Examination of the chest revealed limitation of respiratory excursions of the left hemithorax. Decreased tactile fremitus, marked diminution of breath and voice sounds and dullness on percussion were noted over the lower half of the left portion of the chest, extending up to the level of the third rib anteriorly and the fifth thoracic vertebra posteriorly. The trachea was deviated to the right. The apical impulse was not made out on palpation; there was sinus rhythm with a rate of 100 per minute, and an aortic diastolic murmur was heard best in the third left interspace. Neurologic examination was not remarkable. The patient was somewhat incoherent and confused but cooperative and euphoric.

The temperature was 101.8°F., the pulse 118, and the respirations 34. The blood pressure was 130/100.

Examination of the blood demonstrated 11.0 gm. of hemoglobin and a white-cell count of 8950, with 84 per cent neutrophils and 17 per cent lymphocytes. The hematocrit was 36 per cent, and the corrected erythrocyte sedimentation rate 35 mm. in 1 hour.

The sputum was thick, rusty and tenacious. Gram's stain revealed the sputum to be loaded with gram-negative diplococci; the polymorphonuclear cells burst with these gram-negative diplococci, which had the morphology of meningococci. A number of gram-positive diplococci outside the polymorphonuclear cells were also noted. Neufeld typing and culture revealed predominantly Type 1 meningococci, with some Type 15 pneumococci.

A roentgenogram confirmed the impression that fluid was present in the left side of the chest. Thoracentesis was productive of 1250 cc. of serosanguineous fluid, which contained 4500 leukocytes per cubic millimeter, 95 per cent of which were polymorphonuclear cells. Culture of this chest fluid on blood-agar plates was positive for gram-negative diplococci, which were typed as Type 1 meningococci.

Blood cultures on admission before institution of chemotherapy and on the 3rd and 13th hospital days were negative for the meningococcus. Urinalyses were not remarkable, and there was a positive blood Hinton test but negative spinal-fluid Hinton and Wassermann tests. The spinal-fluid examinations, including culture, were not remarkable.

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‡The bacteriological studies in this case were made in the laboratory of Dr. Maxwell Finland, at the Thorndike Memorial Laboratory, Boston City Hospital.

The patient was given 5 gm. of sodium sulfadiazine intravenously on admission and in the usual oral dosage; adequate blood levels were obtained. Rumple-Leede's test on the day of admission and on several subsequent days was negative for petechiae. The rash on the legs began to fade on the 2nd hospital day and had completely disappeared 5 days later. The sputum and chest fluid on the 3rd hospital day, as well as on subsequent examinations, were negative on culture for the meningococcus. It was apparent that a unique extrameningeal meningococcal infection, causing pneumonia, pleurisy with effusion and skin rash, was involved.

For the first 5 hospital days, the patient improved remarkably, and the signs in the left side of the chest appeared to be clearing. The bacteriologic studies and clinical course were convincing evidence that sulfadiazine was controlling the infectious process. At no time were signs of meningeal involvement present.

On the evening of the 5th day the patient became suddenly cyanotic and dyspneic, frothy pink sputum being expectorated. This typical attack of pulmonary edema was controlled by the use of intranasal oxygen and intravenous aminophylline. The patient was digitalized with moderate speed. A vital-capacity determination on the 8th hospital day was 30 per cent of normal.

In the remaining 7 hospital days the problem was essentially one of treating acute left ventricular failure. There were repeated bouts of pulmonary edema, dyspnea and cyanosis. The patient during this period was hallucinated and at times maniacal, requiring marked restraint and sedation. In spite of all the usual methods of therapy, he died on the 13th hospital day during one of these episodes.

Autopsy was performed 15 days post mortem (the interval after death precluded definitive bacteriologic study). Cardiac failure was thought to be the cause of death, as evidenced by pulmonary congestion and edema, chronic passive congestion of the liver and congestion of the spleen and kidneys. The left lung showed an organized confluent bronchopneumonia. The heart revealed severe coronary-artery atherosclerosis, with calcification and dilatation of the ascending aorta. Histologic study did not confirm the clinical impression of syphilitic aortitis or valvulitis.

In this case meningococcal pneumonia and pleural effusion were present without meningeal involvement. The patient did well on chemotherapy so far as the infective process was concerned but, as autopsy showed, died of heart disease. The postmortem finding of a confluent bronchopneumonia was also reported in the autopsy material of Fletcher.[2]

Discussion

Osler[3] and others have pointed out that pneumonia is frequently described in certain outbreaks of epidemic meningitis, but the etiology of these pneumonias is not clear. The first recorded cases of primary meningococcal pneumonia were those of Jacobitz,[4] who reported 12 patients among a company of soldiers infected by the meningococcus. He divided the cases into five groups: typical meningococcal meningitis (2 cases); meningococcal pneumonia in association with meningitis (3 cases); pneumonia without meningitis (in a case in which sputum and nasopharyngeal examinations revealed meningococci and the symptoms included pyrexia ending by crisis, rusty sputum and signs of consolidation); bronchial catarrh without meningitis, the sputum containing meningococci (4 cases); and lung infections in which the meningococcus was found mixed with other bacteria (2 cases).

Sophian[5] mentioned a case in the 1912 Kansas City meningitis epidemic of a woman who had pneumonia and was treated for four days, during which many meningococci were present in the sputum. She then developed meningococcal meningitis.

Osler[3] reported that 8 cases of pneumonia occurred in a Boston epidemic of cerebrospinal fever, but he did not give the bacteriologic findings.

During the influenza epidemic of 1918–1919, impetus to the study of meningococcal pneumonia occurred because of the complicating bronchopneumonias. This was especially true among American troops in England and France. Fletcher[2] reported the bacteriologic findings in post-mortem examinations of 36 patients who had died from bronchopneumonia following influenza contracted on a transport ship from the United States. In 11 cases the meningococcus was the predominant organism, but in each case *Haemophilus influenzae* was also present. Kinnicutt and Binger[6] found at autopsies in 47 cases of postinfluenzal bronchopneumonia at a base hospital in France that lung cultures were positive for the meningococcus in 19. It is also interesting to note that in 50 cases of bronchopneumonia in which blood cultures were taken, 10 per cent revealed growth of meningococci and terminated fatally. Meader, Means and Hopkins,[7] reporting on American troops in England, observed 5 cases of meningococcal pneumonia among 188 cases in which lung cultures were done at autopsy.

Probably the most complete work on this subject was done by Holm and Davison[8] and Davison, Holm and Emmons.[9] At a camp in France they studied 403 cases of pneumonia, many of which — but not all — were postinfluenzal pneumonias. Of these cases, 85 showed meningococci in the sputum. Of the 78 patients who died of pneumonia and were studied by culture at autopsy, 23 revealed meningococci in the lungs. Of these, 7 gave pure and 16 gave mixed cultures. From the studies, it was concluded that the meningococci may produce either bronchopneumonia or lobar pneumonia and that, because of the similarity of the organisms found in these cases to those found in the spinal fluids of patients with meningococcal meningitis, cases of meningococcal pneumonia may arise from cases of meningococcal meningitis and vice versa.

Reimann[10] states that the pleura is seldom involved in cases of meningococcal pneumonia. The cases reported in the literature substantiate this statement. The only case, other than the one recorded above, in the available literature was reported by Herrick[1] in a soldier who had bronchitis and later developed pleurisy with effusion and empyema. Culture of the aspirated chest fluid revealed a growth of meningococci.

The great majority of the cases of meningococcal pulmonary infection in World War I were associated with the complicating pneumonias of the severe influenza epidemic then prevalent. During World War II the severe pandemic type of influenza did not occur, although scattered, milder epidemics

were occasionally reported. It is therefore quite interesting that the only pertinent paper found in a review of the available literature since the onset of World War II was that of Roberg,[11] who reported a case in which a severe meningococcal pneumonitis developed five weeks after recovery from pneumonia, probably of viral etiology. In this case the sputum smear showed gram-negative intracellular diplococci and the sputum culture revealed 75 per cent meningococci and 25 per cent hemolytic streptococci (Group A). A blood culture taken prior to sulfadiazine therapy was negative. The patient had a morbilliform rash. Roberg indicates that if the sputums in cases of pneumonia were routinely cultured under conditions favorable to the growth of the meningococcus, recognition of meningococcal respiratory infection would be made more frequently than is indicated by the paucity of reference to this entity in the literature.

Summary

A case of meningococcal pneumonia with meningococcal pleural effusion is presented, and the literature reviewed.

In epidemics of meningococcal infection with or without meningeal involvement, careful bacteriologic studies will probably uncover more cases of meningococcal pulmonary involvement than are reported at present.

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CLINICAL NOTE

AN UNUSUAL COMPLICATION OF INTESTINAL INTUBATION*

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THE value of intestinal intubation for decompression by suction is so widely recognized that it is used extensively as a diagnostic and therapeutic adjuvant. The Miller–Abbott and similar tubes, however, require the same working precision as any other instrument, and their proper function needs the attending physician's constant care to prevent complications.[1, 2]

Most of the complications are familiar to all who have employed intestinal intubation. None are so serious as to condemn wide use of the procedure, but all are to be avoided if possible. The following is a list of minor hazards, some of which may seriously interfere with satisfactory decompression: difficulty or inability to introduce tubes into the duodenum[1–5]; minor epistaxis; transient pharyngitis or eustachian salpingitis; leaking or transposed adapters; leaking or ruptured balloons; leaking tubing; coiling in the stomach[2, 4]; blocking of the suction lumen with intestinal contents; and accumulation of secretions proximally.

Other reported complications, such as acute otitis media, laryngeal edema or necrosis,[6] gastrointestinal hemorrhage,[2] perforations, obstruction or intussusception from overdistended balloons[5] and knotting of the tubing distal to the gastric cardia,[2, 4] may seriously endanger a patient's life, even when promptly treated and may necessitate additional surgery at a most inopportune time.

The following recently encountered case is illustrative of a complication that is of interest because of its unusual character and the fact that a few simple precautions may prevent its occurrence.

A 17-year-old soldier was admitted to hospital on February 19, 1947, with the typical history and physical findings of acute appendicitis of 24 hours' duration. At operation a gangrenous appendix, which was perforated on removal, was found. In spite of parenteral antibiotics and Ochsner treatment a generalized peritonitis developed. On the 5th day a pelvic abscess was noted on rectal examination. Although gently done, palpation apparently caused intraperitoneal rupture of the abscess, which was successfully drained through the rectum 4 days later. A subhepatic abscess, which subsequently localized, was drained on the 12th day after appendectomy.

On an attempt to begin oral feeding on the 13th day, the patient developed abdominal cramps, nausea, vomiting, distention and obstipation. Roentgenograms of the abdomen showed dilated small-intestine patterns, with dependent fluid levels. A Miller–Abbott tube with 2 cc. of mercury in the balloon[4] was passed into the stomach and attached to constant suction. After repeated unsuccessful attempts the tube finally passed through the pylorus spontaneously on the 5th day. Fortunately, during this period decompression progressed satisfactorily with intragastric suction; the patient remained afebrile, was relieved of pain and maintained a slow pulse, and the abdomen remained nontender.

In the next 48 hours the tube progressed rapidly to a point in the left lower quadrant from which it moved slowly, if at all. Five days after passage beyond the pylorus the 3-foot mark had not reached the external nares. Under fluoroscopic observation thin barium sulfate suspension was introduced to determine the site and extent of the obstruction.[2] The barium was seen to pass very slowly through a 5-cm. seg-

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ment of jejunum whose lumen was persistently constricted to 3 or 4 mm. and thence into normal bowel. However, the most remarkable finding was that just proximal to this obstruction the tube was tightly coiled through two full turns into which the distal end had passed to make a simple (straight) knot. An attempt was made to withdraw enough tube to uncoil its distal end, and traction to the point of pain was made. This resulted in straightening of the normal curves at the gastric cardia, duodenum and ligament of Treitz but failed to move the coiled, distal end.

Since the point of obstruction had been demonstrated, and the patient had been decompressed, adequately hydrated and was in good electrolyte balance, immediate operation was performed. The abdomen was opened through a left paramedian incision, and an obstructing omental adhesive band was

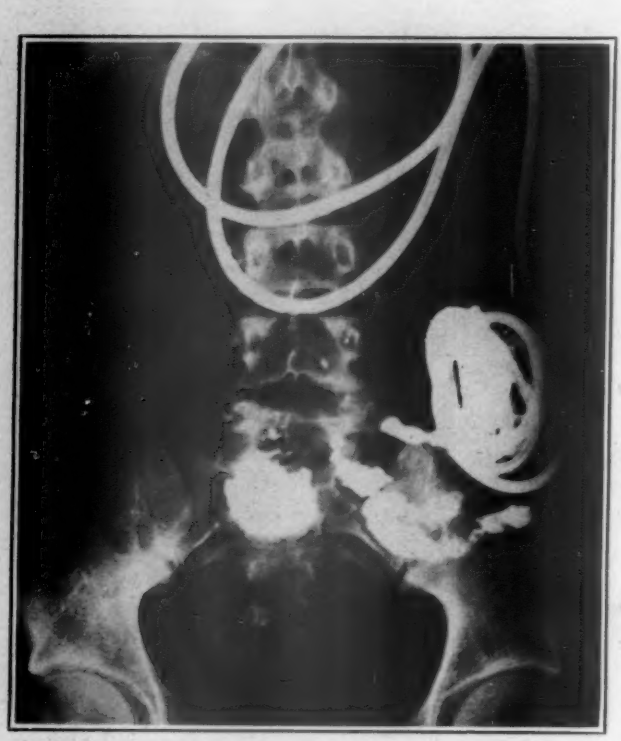

FIGURE 1. *Film Showing Conclusively the Presence of Two Complete Coils about the Mercury-Weighted Balloon.*

readily located about 4 feet distal to the ligament of Treitz. The tube was found to be tightly coiled and knotted proximal to this point, but it was possible to untie the knot and withdraw the tube without opening the bowel. The patient subsequently made an uneventful recovery.

DISCUSSION

Looping and coiling of intestinal tubes in the stomach is very commonplace, and the practice of feeding excess lengths of tubing into the stomach without frequent radiologic check-up is universally condemned.[5] On the other hand coiling or knotting of tubing in the lumen of the small intestine is most unusual, particularly in the absence of redundant loops behind the advancing tip. To produce such a complication there apparently must be dilated bowel proximal to a nearly complete obstruction, hyperactive peristalsis and a tube that is quite flexible or has previously been deformed by storage in a tight coil.

The tube used in the case reported above was not new, was moderately flexible and was found to have been stored in a tight coil for a considerable length of time. The use of a mercury-weighted balloon probably carried the tip to the point of obstruction more rapidly[5] than the rate of proximal decompression and may have played an indirect role in the coiling process. The weight of mercury in the balloon apparently caused the tip of the tube to prolapse through the coils (Fig. 1) and produce a straight knot, which was tightened when extraction was attempted. Therefore, it seems reasonable to call attention to this possibility of coiling at an obstructed point with the use of the Harris single-lumen, mercury-weighted rubber tube[5] or the even more flexible, nonopaque, single-lumen "Koroseal" tubing described by Millet.[7]

It seems likely that this complication may be prevented by the following precautions: storage of all types of intestinal tubing in broad loops or, preferably, in linear fashion by vertical suspension; avoidance of introducing redundant loops of tubing without repeated radiologic check on the progress of the tip; and demonstration of the site and relief of obstruction as soon as practicable after the forward progress of the tip definitely stops.

SUMMARY

The more frequent complications of intestinal intubation are considered.

A case is presented in which a mercury-weighted Miller–Abbott tube spontaneously coiled and tied itself into a simple knot in the jejunum proximal to an obstructing omental adhesion. This complication was apparently produced by the use of a flexible tube, previously deformed by long storage in a tight coil.

Ideally, intestinal tubes should maintain slight inflexibility and should be stored without coiling deformity, and their progress through the intestine should be followed carefully by x-ray observations.

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THE SIGNIFICANCE OF "TICS" AS POSSIBLE MANIFESTATIONS OF EPILEPSY*

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IN DESCRIBING the numerous manifestations of epilepsy, recent textbooks of neurology[1–3] discuss a great variety of motor phenomena but do not include the so-called "tics" as possible manifestations of epileptic disorder. However, in the older literature[4–6] the coexistence of epilepsy and tic was noted frequently enough to raise the question of an etiologic relation between the two, although conclusions regarding such a relation were generally believed to be premature. With the introduction of electroencephalography a new technic has become available, promoting a broader knowledge of epilepsy and permitting a re-evaluation of questions concerning epileptic manifestations. During the past two years I have observed 3 cases of tic in which, with the aid of electroencephalographic study, a diagnosis of epilepsy was made and in which, on the basis of all the evidence available, it appeared that the tics were true manifestations of epilepsy and not unrelated findings.

CASE REPORTS

CASE 1. A 12-year-old boy was first seen on May 18, 1946, having been referred for treatment of a "facial tic," which had been present for approximately 1 year and was considered a psychoneurotic manifestation.

The past history revealed that from the age of 6 years the patient had displayed several other types of motor phenomena (interpreted as "nervous habits"), as follows: brief opening and closing of both fists, brief jerking of the head to one side with immediate return to the midline, sudden opening and closing of the mouth and sudden wrinkling of the forehead. Each type of motor pattern occurred several times daily for a few months and was then replaced by one of the others.

The patient was considered intelligent and was doing well in the 7th grade of school. There was no history of serious illnesses. The family history revealed that the patient's father had epilepsy; his attacks were of the grand-mal type and had occurred about once every 2 years since the age of 25.

On neurologic examination the only positive finding was the occurrence of brief twitching of the orbicularis oculi muscles, primarily on the right side, occurring every few seconds. The patient was co-operative but seemed slightly embarrassed during the examination.

An electroencephalogram‡ showed a great deal of slow-wave activity, with marked shifting asymmetry. There were definite discharges of typical 3-per-second spike and wave activity at rest, and these were greatly exaggerated during overbreathing.

On treatment with 90 mg. of Mebaral twice daily, the tic completely disappeared, and there were no unpleasant side effects of this medication. When the therapy was changed to tridione, the twitching occurred more frequently than prior to the first visit. Therefore, the patient was maintained on 90 mg. of Mebaral twice daily, with control of twitching until the last examination 1 year later. Shortly before the last examination experimental withdrawal of Mebaral was followed by a return of the tic within 48 hours. However, when the drug was readministered, there was again complete control.

CASE 2. A 9-year-old boy was first seen on August 1, 1946, because of a "facial tic" of 1 year's duration. Prior to his visit the patient had consulted an oculist because it was thought that he required glasses; the eyes were found to be normal, and he was then referred for psychiatric study.

The past history revealed that at the age of 1 year the patient had had a generalized convulsion and had been hospitalized for 4 days. A diagnosis of acute tonsillitis was made at that time. There were no other generalized convulsions up to the time of his first visit.

The patient had recently completed the 3rd grade of school with high marks. Although his behavior was described as satisfactory, it had been observed that he was, at times, slightly irritable.

Neurologic examination was negative except for the occurrence of brief twitching of the orbicularis oculi muscles every few seconds. The patient was co-operative and friendly; he was not shy or fearful.

An electroencephalogram showed a great deal of high-voltage slow-wave activity in the frequency range of 4 to 7 per second, occurring in groups and also as scattered waves. During overbreathing there was a very large build-up, with the occurrence of episodic high-voltage 3-per-second waves but no spikes. Although the tracing was suggestive of petit-mal activity, there were no typical petit-mal waves.

Treatment was started with 30 mg. of phenobarbital three times daily. One week later the patient showed marked improvement; no twitching of the orbicularis oculi muscles was observed. However, further study was not possible because the mother was unwilling to have her son take regular medication.

CASE 3. A 14-year-old boy was first seen at the Southard Clinic on March 13, 1946, because of a history of repeated twitching of the head of 1 year's duration. Several times daily the patient's head jerked slightly to the right and then promptly returned to the midline.

The patient had been a behavior problem since the age of 5. He was a nail biter, was at times stubborn, rude or disagreeable and frequently disobeyed his parents; 2 weeks before entry he had been arrested with a group of boys for breaking into a store. However, he was doing well in the 9th grade of school.

Neurologic examination was negative except for the appearance of an occasional slight twitch of the head to the right, with a rapid return to the midline. During the interview, the patient was somewhat evasive and seemed resentful at having been brought to a psychiatrist for examination.

The electroencephalogram showed paroxysmal high-voltage discharges occurring at rest. On overbreathing there was a large build-up, with the appearance of numerous high-voltage 3-per-second waves, some associated with small spikes. The tracing was consistent with epileptic disorder of the petit-mal variety.

The patient was given 90 mg. of Dilantin Sodium three times daily, and after a few days the so-called "tic" disappeared. Three months later the medication was discontinued, and during the subsequent 4 months of follow-up observation there was no recurrence of twitching.

DISCUSSION

In all 3 cases presented above the electrocephalograms showed epileptic dysrhythmias. In 1 case the electroencephalogram revealed classic bursts of 3-per-second spike and wave activity, diagnostic for the petit-mal epilepsies. In another case bursts of 3-per-second waves with small spikes occurred;

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‡Electroencephalograms were recorded at the Boston Psychopathic Hospital and were interpreted by Dr. Milton Greenblatt.

although not classic, this tracing was also considered characteristic for petit-mal epilepsy. In the third case, although the dysrhythmia was of the high-voltage, slow-wave, 3-per-second variety, the absence of spikes made the tracing only suggestive of petit-mal dysrhythmia. However, when all three electroencephalograms were viewed together one obtained the impression that they represented similar dysfunctions. In each case a diagnosis of idiopathic epilepsy was made.

It is my opinion that these 3 cases represent atypical forms of myoclonic epilepsy. In favor of this opinion is the electroencephalographic finding of 3-per-second spike and wave dysrhythmia, which, according to Lennox,[7] is characteristic of myoclonic epilepsy as well as of petit-mal and akinetic epilepsy. Tics have a resemblance to myoclonic jerks, and although in the usual forms of myoclonic epilepsy brief contractions of muscles in the upper extremities occur, at times similar contractions of other muscles are seen.[7]

Tics are usually considered to be manifestations of neurotic disorders.[8] One should therefore consider the possibility that the tics in these cases were of psychogenic etiology and that their occurrence in patients with epileptic dysrhythmia was merely a coincidence. This possibility cannot be entirely excluded with the limited evidence available. However, it appears to be more likely that the tics described were true manifestations of epilepsy, not only in view of their resemblance to myoclonic phenomena and the rather characteristic electroencephalographic findings but also because of the pronounced response to relatively small doses of anticonvulsant medication without the appearance of drowsiness or other side effects.

Wechsler[2] states that, although most observers have assumed tics to be psychogenic, the fact that they occur at times on the basis of brain damage—for example, as a sequel to epidemic encephalitis—should lead one to question routine psychogenic explanations of their origin. He states that the precipitation or aggravation of tics by emotional factors does not argue in favor of a completely psychogenic explanation because many definitely "organic" movements are similarly affected by emotional fluctuations.

In view of these considerations it appears reasonable that more cases with tics should be studied from the electroencephalographic point of view to clarify the question whether there is an underlying epileptic dysrhythmia. Although it is expected that few such patients will be found to have epilepsy, this diagnosis should be kept in mind when the problem of tic presents itself.

Summary

Three cases are reported in which tics appeared to be manifestations of epilepsy. It is suggested that more cases with tics be studied by electroencephalography to determine the incidence of epileptic dysrhythmia in this group of disorders.

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INFECTIOUS MONONUCLEOSIS WITH INTENSE JAUNDICE OF LONG DURATION*

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JAUNDICE in infectious mononucleosis was first described in 1923 by Downey and McKinlay.[1] Since that time, scattered reports of its occurrence have appeared.[2–21] Martin,[8] in 1941, described 13 previously reported cases. In 1944 Boger[17] found 27 cases, and Spring,[14] in the same year, estimated that 35 cases had been recorded. Wechsler[21] discovered an additional 25 cases and reported 34 cases of his own from an epidemic of infectious mononucleosis. Thus, at least 100 cases have been described. This figure is in no sense an adequate reflection of the frequency of clinical jaundice in infectious mononucleosis, since undoubtedly many cases remain unreported. In different series, the incidence of jaundice has ranged from 0 to 13 per cent.[3, 7, 14, 20–22]

The following case is presented because of the extreme severity of the hepatic involvement.

CASE REPORT

F. G., a 30-year-old man, entered the hospital complaining of jaundice of 3 weeks' duration. Five weeks before admission he had noted the onset of anorexia. One week later the urine became dark, and he began to experience easy fatigability and weakness. Three weeks before admission, the skin became yellow and the stools light. He had no abdominal pain throughout this period but lost 30 pounds in weight. During the week before admission, pruritus became pronounced. He had had a low-grade temperature for a few weeks and had sensations of chilliness and generalized mild aches. The remainder of the history was noncontributory.

Physical examination disclosed a large-framed, muscular, markedly jaundiced man in no acute distress. A few petechiae and ecchymoses were present on the upper anterior portion of the chest wall. In the axillary and inguinal regions bilaterally, small lymph nodes, 1-2 cm. in diameter, were palpable. No cervical or epitrochlear nodes were felt. Examination of the chest was negative. The liver edge was palpated 2 cm. below the costal margin and was nontender. The splenic edge was 2 cm. below the costal margin and firm in consistence. The remainder of the examination was negative.

The temperature was 101°F.

Examination of the blood revealed a hemoglobin of 12.5 gm. per 100 cc. and a white-cell count of 4300, with 21 per cent neutrophils, 54 per cent lymphocytes, 15 per cent monocytes, 5 per cent eosinophils, 1 per cent basophils and 4 per cent stab cells. Many of the lymphocytes had foamy, vacuolated cytoplasm, kidney-bean and clover-shaped nuclei, increased azurophilic granulation and "folding-over" of the cytoplasm. The heterophil-antibody test was negative at that time, although the patient had been ill for 5 weeks.

The icteric index was 210, and the van den Bergh reaction immediate direct and indirect, with a bilirubin of 20.0 mg. per 100 cc. The alkaline phosphatase was 5.4 units, the cholesterol 149 mg. per 100 cc., with only a trace of esters, and the cephalin-flocculation test was negative. The total protein was 5.4 gm. per 100 cc., with an albumin of 3.6 gm. and a globulin of 1.8 gm. A stool was negative for bile. The urine was positive for bile, but negative for urobilinogen. The prothrombin was 80 per cent of normal, and the bleeding time was 2 minutes. On the intravenous hippuric acid test 0.42 gm. was excreted in 1 hour (normal, 0.8–1.3 gm.).

X-ray study of the abdomen showed hepatomegaly and splenomegaly. There was no evidence of gall-bladder calculi.

Four days after admission, the serum bilirubin rose to 27.5 mg. per 100 cc., and a ++ cephalin-flocculation test, which subsequently became +++, developed. Thereafter, the icterus began gradually to decrease. Bile appeared in the stool, and urobilinogen in the urine. The icteric index dropped from 210 to 171 a week after admission, to 61 within 2½ weeks of admission, to 43 a week later and to 31 during the 5th and 21 during the 6th hospital week, and to 18 4 days before discharge. The hospital stay was 8 weeks.

During the first 3 weeks the temperature never rose above 102°F., and thereafter the level gradually returned to normal. Treatment consisted of a high-calorie, high-protein, high-carbohydrate, low-fat diet, with added vitamins and lipotropic factors, and on this regimen appetite improved and the patient felt much better. No significant adenopathy developed. The liver and spleen remained palpable for about 6 weeks, and were not felt thereafter. The total protein rose to 6.1 gm. per 100 cc., and the albumin to 4.3 gm. The cholesterol reached 194 mg., and the cholesterol esters 82 mg. per 100 cc.

A marked leukopenia was present throughout, the white-cell count dropping to 2900 a week after admission and to 2000 on the following day. It remained below 5000 for about 7 weeks, reaching 5200 during the week before discharge. The peak of the lymphocyte percentage was 78 per cent, which was present 1 week after admission; the level thereafter gradually decreased until it reached 31 per cent the week before discharge.

Initially the heterophil-antibody test was negative. Two and a half weeks after admission, a positive titer of 1:28 was reported; a week later the titer had risen to 1:112, and in the fifth week, it rose to 1:896. At the time of discharge, the patient was faintly icteric, but otherwise well.

DISCUSSION

Kilham and Steigman[9] have described an acute focal hepatitis with histiocytic reaction in infectious mononucleosis, and Ziegler,[23] has confirmed the presence of an acute inflammatory liver reaction. Cohn and Lidman[24] reported hepatic involvement, as judged by different liver-function tests, in 15 successive cases of infectious mononucleosis without jaundice.

Among 64 patients with infectious mononucleosis seen at the Long Island College Hospital during the past ten years, 6, or 9.4 per cent, showed jaundice clinically. The cephalin-flocculation test was performed on 25 of these patients, and was ++++ in 11 patients (44 per cent), +++ in 2 (8 per cent), ++ in 4 (16 per cent), + in 2 (eight per cent), doubtful in 2 (8 per cent) and negative in 4 (16 per cent). Thus, it was definitely positive in 52 per cent of cases and questionably positive in an additional 22 per cent. This suggests that a far greater number of patients with infectious mononucleosis have liver damage than the presence of clinical jaundice indicates, although it is known that other conditions than liver disease may cause a positive test.

The patient described above was visibly icteric for at least eleven weeks. The duration of the ill-

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ness, including the preicteric period, was thirteen weeks. He failed to develop a definitely positive Paul–Bunnell test until eight and a half weeks after the onset of the illness. The jaundice appeared initially to be obstructive in character, and yet there was definite evidence of an active hepatitis (the cephalin-flocculation test, the hippuric acid test and the ratio of cholesterol to cholesterol esters). The intensity of the hepatitis may have been linked to the late development of the usual serologic response to infectious mononucleosis. Thus, the possibility of a diminished immunologic defense mechanism must be considered. Although the presence of enlarged lymph nodes in the hilus of the liver could not be ruled out, there was sufficient evidence of acute hepatitis to establish this as the most probable cause of the jaundice.

Most cases of jaundice in infectious mononucleosis have been of short duration and slight intensity. Downey and McKinlay's[1] case in 1923 had a "faint and transient" jaundice. In the case reported by Fowler and Tidrick,[6] the jaundice disappeared in eight days. Martin,[8] reviewing the literature before 1941, stated that the jaundice seldom lasted longer than a week. Contratto[13] reported that the usual duration of icterus was not more than two weeks. In the 5 cases reported by Spring,[14] the jaundice lasted no longer than two and a half weeks. Kruger's[19] patient remained icteric for three weeks. Wechsler[21] found that three and a half weeks was the average duration of icterus in his 34 patients, 3 of whom remained icteric for over forty days. The longest duration of jaundice reported was 48 days.[21] None of the 6 cases studied at the Long Island College Hospital exceeded ten days in duration, with the exception of the case reported above.

Laboratory data reflecting the intensity of the jaundice were rarely presented. Wakefield and Mackay[2] found the bilirubin to be 5.6 mg. per 100 cc., and in Fowler's[6] case it was 5.0 mg. The highest figures cited by Bernstein[7] in a comprehensive review of infectious mononucleosis in 1940, were an icteric index of 50 and bilirubin of 8 mg. per 100 cc. in the case described by Stuart, Burgess et al.[3] in 1934. The same figures were mentioned by Wintrobe[25] in 1942. Kilham and Steigman[9] reported 4 cases in 1942 in which the highest bilirubin was 7.5 mg. per 100 cc. In the same year, Carter[10] observed a case in which the bilirubin was 22.0 mg. per 100 cc., and Gold[11] described one with a bilirubin of 23.3 mg. and an icteric index of 150 units. The highest figures in Spring's [14] cases were an icteric index of 74.3 and a bilirubin of 7.0 mg. per 100 cc. In the cases reported by Monat,[15] Boger,[17] and Morris[18] the highest icteric index was 81. Wechsler[21] found 100 to be the highest icteric index in his cases, only 2 patients having levels over 80. The highest icteric index in the group of cases at the Long Island College Hospital was 31 (except for the patient described above).

Thus, the jaundice of infectious mononucleosis has usually been mild, and its duration has rarely exceeded a month. In the case reported above the jaundice not only exceeded that of Gold's patient in intensity — the icteric index reaching 210 and the bilirubin 27.5 mg. per 100 cc. — but also lasted almost twice as many days as that in the longest case described. This case represents an extraordinary degree of hepatic involvement in infectious mononucleosis, no parallel for which has been found in the literature reviewed.

The profound leukopenia may have been related to the hepatic damage. Leukopenia is not uncommon during the first week of infectious mononucleosis, but usually the white-cell count rises before the temperature returns to normal.[25] Press[20] found leukopenia during the first week in 38 of 96 patients; during the second week, however, the white-cell count was normal or above in most cases. In the case presented above the white-cell count not only reached 2000 during the fifth week of jaundice but also remained below 5000 during the first seven weeks of hospitalization.

It should be pointed out that this case resembled a severe case of infectious hepatitis in all respects except the peripheral blood smear. The negative Paul–Bunnell tests during the first eight weeks of the illness might well have been accepted as evidence that this was, indeed, a case of infectious hepatitis, especially in view of the frequent occurrence of lymphocytosis and atypical lymphocytes in infectious hepatitis. The importance of repeated heterophil-antibody tests for long periods in suspected cases cannot be overemphasized. Probably many cases that failed to show the specific serologic response early in the disease have been labeled infectious hepatitis, when they actually represented one of the protean manifestations of infectious mononucleosis.

The therapy of infectious mononucleosis should be revised in the light of present knowledge of the frequency of liver involvement. Dietary therapy should be similar to that in infectious hepatitis, with a high-calorie, high-protein, high-carbohydrate diet. The early ambulation commonly allowed should be restricted in many cases. Certainly, bed rest should not be discontinued until laboratory evidence of hepatic involvement has disappeared. The experience of some patients, who have a long period of weakness and malaise after the illness is apparently at an end, might thus be avoided, and the possibility of recurrence or of permanent hepatic damage would be diminished.

Summary

A case of infectious mononucleosis with intense jaundice of long duration is presented. The literature is briefly reviewed.

Of 64 cases of infectious mononucleosis at the Long Island College Hospital, 6, or 9.6 per cent, showed clinical jaundice. The cephalin-flocculation was strongly positive in 13 of 25 patients (52 per cent) on whom it was performed and questionably positive in 6 (22 per cent).

It is suggested that in doubtful cases in which jaundice is present, repeated heterophil-antibody tests be performed before infectious mononucleosis is ruled out.

Dietary therapy and bed rest are important in the management of infectious mononucleosis.

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MEDICAL PROGRESS

UROLOGY

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BOSTON

THE most frequent conditions treated by the urologist are those of the prostate and bladder. With the increased life expectancy that has taken place during the past twenty years, many more men reach the age when prostatic enlargement is likely to occur. The treatment of the obstructing prostate, therefore, deserves increasing consideration. Carcinoma of the bladder has always been a difficult problem, and its treatment in the past has not been too satisfactory. Some progress has been made in the understanding and treatment of both these diseases.

Retropubic Prostatectomy

Two years ago an entirely new procedure for the relief of prostatic obstruction was described by Millin,[1] of London. This operation is called retropubic prostatectomy and the author believes it to be original, although a similar approach was used by van Stockum[2] in 1909.

The features of the operation as described by Millin are as follows: it is an extravesical procedure; it is applicable to all types of prostatic obstruction; it is relatively short and free of shock; the anatomic approach to the prostate is a reasonable one, since no important structures are endangered; the mortality is low; the postoperative course is benign (the postoperative stay in the hospital is seldom over two weeks); and all obstructing tissue is removed.

In a discussion of other recognized operations on the prostate Millin made the following criticisms:

Suprapubic operations. These have a mortality of 6 to 10 per cent and involve a long and uncomfortable convalescence. There is considerable blood loss during and after operation. Postoperative infection is likely. There is a high incidence of secondary hemorrhage.

Perineal operations. Technical difficulties require a long period of apprenticeship. The danger of urinary incontinence, damage to the rectum and persistent fistulas is great. Nursing is difficult because of wound contamination from the rectum.

Transurethral operations. It is difficult to learn to do these operations efficiently. Considerable blood is lost when large glands are removed. Persistent postoperative infection is likely. There is a high incidence of urethral stric-

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ture. The operation results in incomplete removal of the gland and recurrent obstruction.

Believing that these operative procedures were far from satisfactory, Millin studied, on cadavers, a new approach to the prostate. He was convinced that since the prostate is essentially an extravesical organ, it should be removed by an extravesical approach. As a result of his studies the retropubic operation was devised.

Preoperative preparation. The usual studies of renal and cardiovascular function are made before operation. Intravenous pyelograms are obtained. The patient is not catheterized unless there is urinary infection that fails to respond to treatment or unless renal function is poor. Urethral-catheter drainage is avoided if possible.

Anesthesia. Low spinal anesthesia or Pentothal Sodium and nitrous oxide and oxygen are used. The patient is cystoscoped for the first time on the operating table.

Operative technic. The bladder is exposed by a midline suprapubic incision. The prevesical space is opened and cleared of fat. A specially devised self-retaining retractor separates the rectus muscles and presses the bladder upward. The veins on the anterior and lateral aspects of the prostate are exposed and carefully studied, since their distribution varies considerably. These veins are situated in the prevesical layer of the pelvic fascia. A large central vein arises from the deep dorsal vein of the penis; other veins lie on each side. These veins are tied with the aid of a boomerang needle. The prostatic capsule is opened transversely, and bleeding points are grasped between toothed forceps. The incision is then carried down to the adenoma. The apex of the prostatic mass is freed from the capsule, and the dissection is continued up to the bladder neck. Here the prostate is freed by sharp dissection. Bleeding points are controlled by ligature or electrocoagulation. After removal of the hypertrophied gland a No. 18 catheter is passed through the urethra to the bladder. The prostatic capsule is closed with interrupted sutures. The abdominal wound is closed, a small drain being left in the prevesical space.

In his first 20 cases Millin reported no mortality and few postoperative complications. Since this first report Millin has performed over 400 retropubic prostatectomies, which he described at the July, 1947, meeting of the American Urological Association in Buffalo, New York. The mortality was approximately 4 per cent. Millin's enthusiasm for the procedure was unbounded. In his book describing the operation, he states that the extravesical retropubic approach to the prostate enables one to deal with all pathologic conditions within that organ and its contained urethra.[3]

Among the audience who listened to Millin's presentation, there were a few skeptics, consisting of some who had seen Millin operate and who had performed retropubic prostatectomies themselves. Their enthusiasm seemed to be less than Millin's, tempered no doubt by their own experiences. The prevailing opinion, however, was one of considerable interest and an eagerness to go home and "try it out."

Since then little has appeared in our own literature concerning this new method of removing the prostate, although the few reports available have been favorable.

The recent French literature includes a description of retropubic prostatectomy with the report of 70 operations.[4] The mortality was low, 2 deaths; functional results were excellent, and the authors were enthusiastic about the operation.

There are reasons to believe that retropubic prostatectomy will have a very thorough trial in this country. I do not agree that Millin's criticisms of present methods of relieving prostatic obstruction are entirely justified, but I admit that there is some truth in his comments on these procedures. Although the perfect method of removing the prostate may not have been devised, I am not prepared to hand the laurel to retropubic prostatectomy until the long-term results are clear. The urologist should be able to perform all the well recognized operations for the relief of prostatic obstruction.

Carcinoma of the Bladder

The classification of epithelial tumors of the bladder has always been confusing, and no one classification of these neoplasms has been generally accepted. The Tumor Registry of the American Urological Association, after a study of over 1200 sections of these tumors in 1936, decided that it was not practical to segregate bladder neoplasms into definite groups corresponding to their cell types. Jewett and Blackman,[5] after a histologic study of 97 cases of bladder tumor in which autopsy was performed, concluded that accurate classification of large infiltrating carcinomas of the bladder on the basis of cellular differentiation alone was impossible. Many classifications of these tumors in the past have been confusing because they were too complicated.

The present tendency is toward a simpler classification. In 1939 Ash[6] stated that morphologically the tumors fall into two groups, papillary and sessile. For the past seven years epithelial tumors of the bladder at the Massachusetts General Hospital have been classified as papillary and nonpapillary. Tumors in each of these groups are graded I, II or III according to their microscopical appearance.[7] Either the papillary tumors or the nonpapillary (sessile) tumors may infiltrate. This simple classification is essentially the same as that used by the Bladder Tumor Registry, as outlined by Dart[8] and Ash.[9] It has the advantage of correlating the gross or cystoscopic appearance of these tumors with their histologic characteristics. Most bladder tumors

can be fairly accurately grouped and graded in this classification by cystoscopic examination alone.

It will be noticed that the term papilloma is omitted from this classification. Although these tumors do not have the histologic characteristics of malignancy, they are considered papillary carcinoma (Grade I). This is because their subsequent behavior is unpredictable. Ash[6] also avoids the term papilloma, since he regards it as impossible to determine by histologic examination how such tumors would behave clinically. Further basis for this point of view has recently been obtained from the work of Hovenanian and Deming,[10] who report the successful heterologous transplantation of papillary tumors of the bladder in man to the anterior chamber of the eye of the guinea pig. One of their cases was that of a recurring papilloma of the bladder that had no evidence of malignancy. This tumor grew, however, in its transplanted site and thus established its identity as a true cancer.

A study of 107 post-mortem cases of bladder cancer was made by Jewett and Strong[11] to determine the relation of depth of penetration of the bladder wall to the incidence of metastases, lymphatic invasion and perivesical infiltration. The tumors were put into three groups: tumor cells confined to the submucosa; tumor infiltration extended into but not through the muscularis; and tumor cells extended through the muscular coat.

The curability in the first group is 100 per cent, that in the second group 86.6 per cent, and that in the third group 26 per cent. In other words, the incidence of local extravesical extension and metastases increases with the degree of penetration of the bladder wall. The most frequent sites of metastases are the regional lymph nodes, liver, lungs and bones, particularly the vertebras and bony pelvis.[12]

The treatment of bladder cancer is changing, with more tendency toward radical surgery (total cystectomy). Complete removal of the bladder necessitates considerable serious surgery. The ureters must be transplanted to the skin or the large bowel. Skin ureterostomy is the safer procedure, but has obvious disadvantages. Evidence is accumulating that ureterointestinal anastomosis may be compatible with comfort and relative security. This has been adequately proved for nonmalignant diseases of the bladder such as exstrophy, but less so for cancer. Improved surgical technic, adequate preparation of the large bowel and the antibiotics have made ureterointestinal anastomosis a safer procedure than heretofore, with a mortality rate of probably from 10 to 20 per cent.[13] Higgins[14] recently reported no mortality from this operation in his last 22 cases.

The various methods employed in the treatment of bladder tumors are transurethral removal with or without radium, suprapubic operation with local destruction of the tumor or partial cystectomy, total cystectomy and external radiation. Priestley[15] discusses the application of these different procedures to vesical neoplasm and describes the indications for each. Small, noninfiltrating lesions of low malignancy are best suited to transurethral treatment. Segmental resection of the bladder is employed for tumors that are well removed from the ureteral orifices, situated high in the bladder on the dome or lateral walls and of reasonable size. This method is generally used for infiltrating growths. The indications for total cystectomy are extensive low-grade lesions that involve most of the bladder or are present in many areas and frequently recur, highly malignant infiltrating tumors not removable by other measures and any neoplasm that cannot be removed completely without seriously affecting vesical function. External radiation is employed only in cases that are not suitable for surgery.

It is impossible at present to know how effective total cystectomy, as performed today, is as a cure for cancer of the bladder. In the past this operation has been done without the aid of modern methods of technic, preoperative preparation and the recent measures for controlling infection. Many patients whose tumors were so extensive that there was no reasonable hope of cure were formerly operated upon. As a result, the mortality was high, and complications were severe. Although total cystectomy involves a program of serious surgery, this procedure is becoming more simplified and standardized. It will doubtless be applied to more suitable cases and will eventually have a reasonable mortality.

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CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

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CASE 34091

PRESENTATION OF CASE

A sixty-three-year-old Italian-born garage worker entered the hospital for the first time because of weakness of eight months' duration.

About eight months before admission he had a single episode of finding blood on his pillow and in his mouth on awakening. There were no previous or subsequent hemoptyses or hematemeses, but a productive cough developed shortly after this episode and progressed in severity up to admission. About 2 glassfuls of greenish sputum were produced daily. He had no pain but developed moderate exertional dyspnea, weakness and fatigability that necessitated giving up his job shortly after the onset of the present illness. Anorexia contributed to a 45-pound weight loss, and in the last month he developed night sweats and ankle edema.

The past history revealed an episode of epigastric pain twenty-three years before entry diagnosed as "stomach ulcer" and successfully relieved by an ulcer diet, which was followed for only six months. Active duodenal ulcer was allegedly demonstrated by x-ray examination one month before the onset of the present illness.

Physical examination revealed a pale man showing evidence of recent weight loss. There was slight clubbing of the fingers and toes. Lymphadenopathy was generalized with pea-sized to cherry-sized, movable, nontender rubbery nodes in the cervical, supraclavicular, inguinal, axillary and left epitrochlear regions. The right side of the chest was splinted, appeared smaller than the left and was flat to percussion below the level of the fifth rib posteriorly and in the axillary line. Tactile fremitus and spoken voice sounds were increased over the right apex and absent over the right middle and lower lobes. Examination of the heart was not remarkable except for its apparent shift to the right. The liver edge was smooth and nontender and extended 3 cm. below the costal margin. There was a 3-cm. reducible left direct inguinal hernia.

The temperature was 99°F., the pulse 76, and the respirations 28. The blood pressure was 115 systolic, 70 diastolic.

Examination of the blood disclosed a red-cell count of 3,700,000 and a white-cell count of 10,400 with 72 per cent neutrophils, 22 per cent lymphocytes and 6 per cent monocytes. The urine was normal. Guaiac tests on the stools were negative. The serum protein was 6.7 gm. per 100 cc., with an albumin-globulin ratio of 0.76; the nonprotein nitrogen was 25 mg. per 100 cc.

X-ray examination of the chest showed an area of increased density, with a fluid level in the apical division of the right lower lobe; the mediastinum was shifted to the right, and the left lung showed compensatory emphysema. There was some fluid in the right costophrenic sinus. Smears of sputum for acid-fast bacilli were negative. Cytologic smear of the sputum showed tumor cells, and a bronchoscopy revealed an irregular stenotic area in the right-upper-lobe bronchus.

The right axillary lymph node was biopsied.

DIFFERENTIAL DIAGNOSIS

DR. ALFRED KRANES: On first reading this seems like a fairly straightforward problem involving the differential diagnosis of bronchial stenosis with pulmonary atelectasis and infection. So far as the duodenal ulcer goes, I do not see how that can influence the discussion except so far as it might raise the question of whether the original episode of bleeding was hematemesis rather than a hemoptysis. When blood appears in the mouth as described here, it seems much more likely to come from the lung, but I see no way of settling that problem one way or the other.

At this point I think it might be wise to see the x-ray films.

DR. STANLEY M. WYMAN: Examination of the chest is not complete because we do not have an overexposed film to enable us to study the bronchi. The right base is denser than the left. The heart is deflected toward the right with the mediastinum and the trachea. There is an area of hazy homogeneous density occupying the lower middle third of the right lung field, and the right leaf of the diaphragm is obscured, probably by fluid. A definite cavity containing gas or fluid is seen close to the heart in the anteroposterior film and lying as described in the dorsal division of the right lower lobe. The right lower lobe appears decreased in size and appears to be airless. There is some compensatory emphysema in the right upper and probably right middle lobe. However, the patient had emphysema for many years, as seen by the increase in the anteroposterior diameter of the chest. There is probably some fine fibrosis through the left lung, which is otherwise clear. A film of the gastrointestinal tract shows the old deformed duodenum, which is consistent with a history of ulcer.

DR. KRANES: Do you find any evidence of enlarged mediastinal lymph nodes?

DR. WYMAN: I cannot be sure of any. The prominence in the region of the left hilus seems to be vascular, and no definite mediastinal lymph nodes are seen.

DR. KRANES: No particular problem seems to be involved in this case until we come to the last sentence, about which a certain air of finality implies that the answer is to be found in the lymph-node biopsy. If that is so, it becomes more of a problem than was at first apparent, and it excludes immediately the one most common lesion that produces this clinical picture — namely, carcinoma of the bronchus. So far as I am aware, it is most unusual for carcinoma of the bronchus to metastasize generally to the lymph nodes without a good deal more evidence of metastases elsewhere. As a matter of fact, unless this was an extremely bizarre form of carcinomatous metastasis, I do not recall having seen simultaneous metastases to the inguinal, axillary, cervical and epitrochlear nodes. If the biopsy does give the answer, it excludes the possibility of carcinoma of the bronchus.

We come therefore to discussion of the more common types of lesions that produce simultaneous involvement of the lymph nodes and pulmonary parenchyma. There are not very many, but the first that comes to mind is tuberculosis. Tuberculosis does cause cavitation and can cause bronchial obstruction due to inflammatory stricture, but I think there is little else in this picture on which to base a diagnosis of tuberculosis. The x-ray pictures are certainly far from typical. The negative sputum examinations are very much against it, and at this man's age (sixty-three) generalized glandular tuberculosis of the lymph nodes would be unusual. It is much more commonly a disease of younger persons. Even if the lymph node were tuberculous, I do not see why one need assume that the pulmonary lesion was. The diagnosis of the pulmonary lesion would have to rest on the finding of tubercle bacilli, but apparently they were not demonstrated.

Sarcoidosis is another possibility, but so far as I know, it does not produce bronchial obstruction or pulmonary cavitation. This is certainly not my idea of the x-ray picture of sarcoidosis. Would you entertain the possibility of sarcoid from these films, Dr. Wyman?

DR. WYMAN: No.

DR. KRANES: A much more arresting possibility is lymphoma. Pulmonary cavitation and hemoptysis may occur in lymphoma and may be caused in one of several ways. The lymphoma may infiltrate the pulmonary parenchyma, central necrosis, cavitation and hemoptysis eventually resulting, or a mass of glands may cause extrinsic pressure on the bronchus, causing collapse and infection distal to the obstruction. Another possibility, of course, is an endobronchial lymphoma, which is exceedingly rare.

Against lymphoma is the fact that there was no evidence of enlarged lymph nodes in the mediastinum to cause pressure on the bronchus, and furthermore, as I have already stated, intrinsic bronchial lesions have been described but are exceedingly rare. Another objection to lymphoma, although I cannot be sure of how valid it is, is the statement that tumor cells were found by the Vincent Laboratory in the cytologic examination of the sputum. I am doubtful whether lymphoma — that is, individual cells of lymphoma — can be identified as tumor cells by the Vincent Laboratory. I asked Dr. Benjamin Castleman whether it would be possible to identify individual cells in a lymphoma as tumor cells. He said that he thought it might be possible if the tumor was exceedingly undifferentiated, such as a stem-cell lymphoma. Be that as it may, until I have seen it demonstrated I shall remain doubtful. A finding of tumor cells by the Vincent Laboratory still means carcinoma. The only way of making a diagnosis of lymphoma in this case — so far as the pulmonary lesion goes — is its response to x-ray therapy. If, following x-ray therapy, this lesion should completely disappear — with a dosage of about 1200 r — one would have to assume that it was lymphoma. However, should the lesion not disappear, it still might be lymphoma, because although x-ray treatment may be expected to cause regression of lymphomatous tissue or nodes, it could not be expected to reduce the secondary effects of the process such as infection. For the reasons that I have stated I doubt very much that the patient had lymphoma — at least in the lung.

If we disregard the lymph node, and I am afraid that I have to, we are on more familiar ground. The usual causes of this sort of picture in a person of this age are benign pulmonary abscess, which seems unlikely in view of the history and x-ray findings, and benign adenoma of the bronchus, which is consistent with everything described. Against the latter, however, is the patient's age; it occurs usually in the younger age group. Also against it is the fact that tumor cells were found in the sputum. A positive finding of tumor cells has usually been very significant and means carcinoma. Because of that fact and since the rest of the picture is so consistent with the diagnosis, I shall disregard the lymph nodes for the time being, and guess that the patient had a bronchiogenic carcinoma.

A PHYSICIAN: What was the result of the serologic test?

DR. TRACY B. MALLORY: I think we can safely assume that it was negative.

A PHYSICIAN: Is it possible for a malignant tumor of the liver with metastases to the lung to invade the bronchus and give this picture?

DR. KRANES: I think it is unlikely. Metastatic lesions to the lungs do not usually involve the

bronchi, but rather the lung parenchyma. Is that true, Dr. Mallory?

DR. MALLORY: Yes.

CLINICAL DIAGNOSES

Malignant lymphoma, lymphocytic type.
Squamous-cell carcinoma of lung.

DR. KRANES'S DIAGNOSIS

Bronchiogenic carcinoma.

ANATOMICAL DIAGNOSES

Epidermoid carcinoma (Grade II), of bronchus.
Malignant lymphoma, giant follicular type, of lymph nodes.

PATHOLOGICAL DISCUSSION

DR. MALLORY: We had two biopsies from this patient: one from the bronchus and one from a lymph node. They showed two entirely different types of tumor; the one from the bronchus was a squamous-cell carcinoma (Grade II), and the lymph node showed a giant follicular lymphoma. This has posed a great problem regarding treatment. It was believed that x-ray treatment of the lungs was more likely to do harm than good. Hence the tentative plan is to treat the patient with nitrogen mustard, which might influence both neoplasms.

CASE 34092

PRESENTATION OF CASE

A twenty-seven-year-old dentist was admitted to the hospital because of persistent vomiting of twenty-four hours' duration.

The patient was said to have been in good health until one year before admission. He had served in the Navy for three years following graduation from dental school. His entire service had been in the United States. For about one year he had been thought to have a peptic ulcer and had occasional episodes of nausea and vomiting during that time. Five days before admission these episodes became more severe, and he was unable to go to his office. Twenty-four hours prior to admission persistent vomiting started; he became restless and was unable to sleep. When seen the morning of admission the patient was disoriented and obviously critically ill. Immediate hospitalization was advised.

The past history was noncontributory. One sibling had had pulmonary tuberculosis. There was no other history of familial disease.

Physical examination disclosed a hyperactive and disoriented patient. The skin was dry and diffusely tanned. There was no increased pigment in the folds of the skin. The lips and the nailbeds were dusky purple. There were multiple areas of pigment on the tongue about the color of egg plant. No pigment was seen on the buccal mucosa. There was a marked tremor of the tongue and extremities. Motor activity was so great that special attendants were required to restrain the patient.

The temperature was 104°F., the pulse 134 and regular, and the respirations 24. The blood pressure was 50 systolic, 30 diastolic.

Examination of the blood revealed a hemoglobin of 13.2 gm., a hematocrit of 39 per cent and a white-cell count of 10,700, with 52 per cent neutrophils, 5 per cent young neutrophils, 4 per cent late myelocytes, 23 per cent lymphocytes, 13 per cent monocytes, 2 per cent eosinophils and 1 per cent basophils. The blood Hinton test was negative. Urinalysis revealed a specific gravity of 1.010, a ++ test for albumin, a rare hyaline cast, frequent coarse granular casts, a rare red cell and 1 white cell per high-power field. The nonprotein nitrogen of the blood serum was 100 mg. and the sugar 67 mg. per 100 cc., the sodium 135.7 milliequiv., the potassium 6.8 milliequiv. and the carbon dioxide 17.4 milliequiv. per liter.

A lumbar puncture done on the second hospital day revealed an initial pressure equivalent to 200 mm. of water, with the patient poorly relaxed. A Pandy test was negative. The spinal-fluid protein was 30 mg. per 100 cc. and the gold-sol curve was 0001111100. The cell count gave 6 red cells and 3 lymphocytes per cubic millimeter. The Widal and Weil–Felix tests were negative. An x-ray film of the chest taken with a portable machine showed no abnormality. An electrocardiogram disclosed auricular tachycardia at a rate of 160 but no other abnormality.

In the first twenty-four hours the patient received 3000 cc. of 5 per cent dextrose in physiologic saline solution, 500 cc. of whole blood, 900 cc. of physiologic saline solution and 3 ampules of sodium racemic lactate intravenously. In addition he received 150 cc. of Upjohn's cortical extract intravenously, 10 mg. of desoxycorticosterone intramuscularly and 40,000 units of penicillin every three hours. During the next twenty-four hours he received 4500 cc. of 5 per cent dextrose in physiologic saline solution, 550 units of plasma, 3 ampules of sodium lactate, 60 cc. of Upjohn's cortical extract and 10 mg. of desoxycorticosterone. The penicillin was continued. On the third day he received 3000 cc. of 5 per cent dextrose in physiologic saline solution, 2 ampules of sodium lactate, 500 cc. of whole blood, 60 cc. of Upjohn's cortical extract and 10 mg. of desoxycorticosterone.

The temperature ranged from 103 to 105°F. The pulse was never recorded below 130. The blood pressure rose to 129 systolic, 45 diastolic, on the second day after the plasma. On the evening of the third day after being maintained above 100 all day it fell in the late evening to about 80 systolic, 44 diastolic. Clinically he changed little. He remained irrational and hyperactive. On the third day he developed a bronze blush over the arms and upper trunk with the appearance of small vesicles containing honey-colored fluid. Late on

the third day the pulse rose to 190, and the blood pressure became unobtainable. Examination of the blood on the third day showed the sugar to be 139 mg. and the nonprotein nitrogen 46 mg. per 100 cc., the sodium 152.0, the carbon dioxide 24.0 and the chloride 116.0 milliequiv. per liter. The patient died early on the morning of the fourth day.

Differential Diagnosis

Dr. Marian Ropes: Since no definite statement is made, I shall assume that the lung and neurologic examinations were essentially negative.

Dr. Daniel Ellis: That is right.

Dr. Ropes: At the outset I can think of no condition that satisfactorily explains all aspects of the picture. It is my impression that the disease was of at least one year's duration and was not merely an acute episode. There are various groups of symptoms to consider. There are five major ones: the gastrointestinal symptoms, the pigmentation, the evidence of renal failure, the suggestion of adrenal insufficiency and the central-nervous-system symptoms. We are told very little about the gastrointestinal symptoms. The patient had nausea and vomiting, however, and it was thought that he had a peptic ulcer.

There are various conditions that one must think of with the combination of gastrointestinal symptoms and pigmentation. Porphyria is one that comes to mind. However, there is relatively little else in the picture to support that diagnosis. The type of pigmentation is perhaps consistent with it, and the gastrointestinal symptoms surely are consistent. The absence of paralysis and the presence of as much irritation from the point of view of the nervous system are not consistent, and there is nothing else to support the diagnosis. He surely did not have the type in which a colored porphyrin is present in the urine.

One thinks of hemachromatosis, but in the absence of diabetes and liver enlargement and in the presence of definite renal involvement and marked central-nervous-system symptoms, this can be discarded relatively easily. Also, with the pigmentation and chronic involvement I wondered about the possibility of some type of poisoning. The diffuse pigmentation described was surely not that of argyria, and argyria would not explain the rest of the picture. Methemoglobinemia is suggested by the color of the lips and the nailbeds. Again, that would not explain the rest of the picture. There is no further evidence of this, nor is there evidence of any other type of poisoning.

One condition suggested by the gastrointestinal symptoms and pigmentation that must be considered is Addison's disease, with which nausea and vomiting over the course of a year would certainly be possible. However, it would be very unusual not to have had other symptoms — at least weakness during the same period. The pigmentation is in general consistent; the tongue and the skin are characteristic but with such marked pigmentation as I gather he had I would expect some in the folds of the skin. The pigmentation might be a racial characteristic, although we are not told what his race was and this would not explain the pigmentation on the tongue. Certainly, the final crisis could be consistent with that of adrenal insufficiency. Again, the degree of urinary changes was greater than that usually found during an adrenal crisis. Though uremia may occur I would be surprised to find as large a number of casts present during the crisis. Similarly, the central-nervous-system reaction is greater than that usually seen in a crisis. However, in the presence of uremia this is relatively easily ascribed to uremia and not to any underlying adrenal failure. The fever again is much higher than one would expect and surely suggests the presence of infection. That brings up the question of the cause of the adrenal failure if present in this patient. There was a history of tuberculosis in the family. Tuberculosis is not the most common cause of adrenal failure, hypoplasia of the adrenal glands being a more common cause of Addison's disease. Similarly, the infection suggested by the fever and the cellular reaction in the blood raise the question of adrenal insufficiency secondary to an acute infection. Some of the laboratory tests are consistent with Addison's disease. The hypoglycemia is typical. The potassium is elevated, but the normal or low sodium is unusual with this degree of potassium elevation. In fact it is also interesting that a patient with elevation of potassium had a normal electrocardiogram except for the tachycardia.

For the moment, therefore, to leave adrenal insufficiency and consider one of the other possible explanations of the entire picture, I would swing to renal failure. There is no question that this patient had renal failure at the time of admission — whether primary or secondary is more of a question. The nausea and vomiting could easily have been due to a slow onset of renal insufficiency. It was present for a somewhat longer period than one commonly sees, but it was inside the limits of what is seen. There is no way with this diagnosis to explain the pigmentation. In my opinion it cannot all be related to the renal failure unless he had porphyria for which I find no other evidence. The degree of fever is not that seen in renal failure. The potassium elevation could have been due to the severe renal failure or to the associated shock, with passage of potassium out through the cells, so that in itself does not need to make one insist on the presence of adrenal insufficiency.

When one considers the possible causes of renal disease in this patient one notices first the relatively minimal urinary changes, the albuminuria with frequent granular casts. There were only rare red and white cells. This raises the question of some of the diseases in which such urinary findings are found commonly, such as myeloma and amyloid disease. I find nothing in the record to suggest

myeloma. Similarly, I find nothing to suggest an underlying cause of amyloidosis. That does not rule out the possibility of amyloid disease of the kidney, but without further support it need not be considered further. When one thinks of periarteritis nodosa or other vascular change as a cause of the nephritis, there is again very little evidence in the rest of the picture for such a diagnosis. So, in terms of renal failure one should think of more common causes at this age, and with no evidence of history of urinary infection the possibility of glomerulonephritis should be put as the most likely explanation of the renal disease. I think that even if adrenal disease was present this patient also had renal disease.

I think that one must consider the possibility of infection in this case. I doubt that any infection that can produce this picture could have been present for a year and explain the earlier symptoms. That could be contradicted if one said that tuberculosis in some form might have been present, but the symptoms throughout the year would be very unusual for tuberculosis in the gastrointestinal tract or abdomen. I can think of no other infection that could explain the symptoms during the year. The terminal event suggests infection, but whether an underlying disease was precipitated by a severe infection is the question. The final rash means very little to me. A bronze blush with vesicles containing honey-colored fluid is difficult to explain but perhaps is suggestive of infection or possibly a disease of unknown cause, such as erythema multiforme exudativum. The lesions described would fit that disease, but in the absence of mouth lesions, eye lesions or anything else consistent with the picture, erythema multiforme exudativum could not be supported. One would have to consider more seriously a meningococcal septicemia leading to adrenal failure. However, the duration of the disease (five days before admission and four days after) would be unusual. There was a five-day period without treatment during which the patient was ill but not so critically ill as patients with a combination of meningococcal septicemia and adrenal involvement. Again, the rash was surely not that ordinarily seen in meningococcal infection. I think the high fever, the cellular reaction in the blood and possibly the rash all suggest infection, but without any evidence of blood cultures or other studies it is impossible to say whether or not this patient had a septicemia. The rash with an apparently thin fluid in the vesicles, if related to infection, suggests a streptococcal infection.

Originally, I had thought of the possibility of a tumor involving the region of the kidney or adrenal gland but was unable to think of any condition that would involve so completely either both kidneys or both adrenal glands, so I have discarded that possibility.

In an attempt to summarize, I shall say that it is difficult to determine whether or not both adrenal and renal failure were present in this patient, but my choice, with the knowledge given here, is that there was an underlying renal disease and that the terminal uremia was precipitated by a superimposed infection. I find nothing to indicate the nature of the superimposed infection.

Dr. Bernard Jacobson: Was the rash caused by the penicillin?

Dr. Ellis: That is what we wondered about when we first saw it. It became most apparent about 6:00 o'clock during the night before the patient died. We did not think it was any more than that which one sees in patients who have had a high fever for a long time.

Dr. Ropes: Can you explain the localization? You described it on the trunk and arms rather than generalized.

Dr. Ellis: There is no explanation for that at all. But the striking feature about this patient when first seen was the cyanosis of the nails, duskiness of the lips, dry skin and hypotension. By the time he got to the hospital his motor activity was the thing that was very prominent and persisted until about 6:00 o'clock the night before he died. The urinary findings, the high nonprotein nitrogen and the relatively low specific gravity, in the face of the very marked dehydration, bothered us, as they did Dr. Ropes. For the first twelve hours we thought that he had anuria, but when he was catheterized at the end of that time we obtained a large volume of urine, with a specific gravity of 1.010 to 1.012 and from that time on he voided quite freely and was incontinent. We were also bothered during the course of the illness by the persistently high fever and the persistent tachycardia. We believed as Dr. Ropes did that the possibilities were adrenal insufficiency, renal insufficiency and infection. We were left with no other choice except to treat him as if he had adrenal insufficiency, and to treat infection, if he had one, with penicillin and try to get him back to a normal electrolyte balance. The treatment was given in detail in this abstract with the hope that we would have some discussion about it after the diagnosis was made. We believed at the time that the patient died that the clinical diagnosis was adrenal insufficiency. We were unable to get any proof that he had an infection although we tried hard and suspected that he might have meningococcal septicemia. Blood cultures were taken, and the last time I saw the record they were not recorded.

Dr. Tracy B. Mallory: They remained negative.

Clinical Diagnoses

Acute adrenal insufficiency.

Acute infection and septicemia (cause undetermined).

Dr. Ropes's Diagnoses

Renal disease (? glomerulonephritis).
Terminal uremia.
Septicemia?

Anatomical Diagnoses

Primary atrophy of adrenal cortex.
Addison's disease.
Chronic thyroiditis, moderate.
Chronic hepatitis, nonspecific.
Persistent thymus.

Pathological Discussion

Dr. Mallory: I do not know that we can explain the whole picture. The outstanding feature of the autopsy was atrophy of the adrenal glands. They were estimated to weigh between 2 and 3 gm., with little cortical tissue; what remained appeared to be chiefly medulla.

On microscopical examination we found scattered fragments of persistent cortex. The cells were very unusual in type. They were four or five times as large as normal and contained practically no lipid. A few did contain the normal pigment seen in the reticular layer. The cells were clumped in small nodules, with no orderly cord formation. Some clusters of lymphocytes were present.

There were no other significant gross findings at autopsy. The pituitary and thyroid glands, testes and parathyroid glands were grossly normal. The thymus was quite large, weighed 30 gm. and was evidently active, with very little involution. There was a terminal congestion and edema of the lung but no evidence of pneumonia. On microscopical examination the pituitary gland appeared normal, the thyroid gland showed moderately severe thyroiditis, with some degree of atrophy, the parathyroid glands were normal, and the testes showed a slight depression of activity. The early stages of spermatogenesis were present but mature spermatozoa were infrequent. But any patient near death can show that much depression of spermatogenesis.

One surprising microscopical finding was a considerable degree of lymphocytic infiltration of all the portal areas of the liver, but I do not know what to make of that. It did not look like infectious hepatitis. I have to leave it without explanation. It is beyond the normal limits.

Dr. Alfred Kranes: Were the kidneys normal?

Dr. Mallory: Entirely — grossly and microscopically.

Dr. Fuller Albright: When I saw this man the problem was one of treatment. It had already been decided that he had Addison's disease. We did not know the cause of the Addison's disease. What about therapy? The question is whether we overtreat or undertreat these cases. I think that the tendency is to overtreat them. The trouble is that there is no easy laboratory test that one can perform quickly and that parallels the patient's condition. Dr. Robert Loeb,[1] of New York, has shown that a patient can die with a high fever and still have normal serum electrolytes. Some unknown factor is present that we do not know how to evaluate. I think, if anything, we overtreated this patient; the serum sodium was high — 150 milliequiv. per liter (the normal is equal to 140 milliequiv. per liter).

A word about the term "atrophy" — we divide cases of Addison's disease into two pathological groups: tuberculosis and something else, which is usually called atrophy. Is that right, Dr. Mallory?

Dr. Mallory: Yes.

Dr. Albright: Does this agree entirely with other cases that you call atrophy?

Dr. Mallory: That is a difficult decision so far as I am concerned.

Dr. Albright: When I was in Vienna, Erdheim showed a case with this second kind of lesion. One adrenal gland was entirely gone, and half the other. He said that eventually the patient would have had Addison's disease when the second gland had become completely involved. This disease is very different from the atrophy that occurs when there is no pituitary stimulus to the adrenal cortex. That is real atrophy. This is something else. The cells disappear by some sort of necrosis, and the whole gland is not involved simultaneously. It is not my idea of atrophy. It is more analogous to thyroiditis.

Dr. Mallory: The problem that Dr. Albright raises is essentially semantic, and I cannot solve it for him. "Atrophy" and "involution" both etymologically connote a comparatively slow shrinkage of tissue such as occurs with aging or with disease. Yet "atrophy" has been in accepted medical usage for over a century to describe fulminant necrosis of the liver. Friedman[2] in reporting a group of 26 cases of Addison's disease recently used the term "contraction," borrowed from the terminology of renal disease. I cannot see that it is an improvement. I do agree with Dr. Albright that in this case there was active destruction of the adrenal cortex rather than the secondary atrophy seen in Simmonds's disease.

Dr. Jacobson: In these cases of cortical necrosis of the kidney in women, what is the adrenal picture?

Dr. Mallory: It may be normal. We have also seen cases in which the adrenal gland shows the same type of necrosis as the kidney, and hemorrhagic necrosis has been reported in the pituitary gland also.

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FEBRUARY MEETING OF THE COUNCIL

A STATED meeting of the Council of the Massachusetts Medical Society was held on February 4, 1948. Among the business, which was transacted with more than usual dispatch, the following items are of particular interest or importance.

The President, under the new arrangement between the Society and the Boston Medical Library, nominated the following to serve as trustees of the Library representing the Society: Dr. Curtis C. Tripp, of New Bedford, Dr. John J. Curley, of Leominster, Dr. Edward S. O'Keefe, of Lynn, and Dr. Albert Ehrenfried, of Brookline.

During consideration of the report of the Committee on Public Relations, discussion took place as to whether the Council should endorse the objectives of the National Physicians Committee, and a motion was offered to this effect. In view of the fact that the Committee on Public Relations had appointed a subcommittee to meet with the Committee on Medical Economics and bring in a report on this matter to the Council, the motion was tabled.

Dr. John F. Conlin presented a general summary of his work as Director of Medical Information and Education, stressing the importance of public relations to individual physicians as well as to society at large. With reference to the woman's auxiliaries he reported that Norfolk and Suffolk are organized, with Essex South and Middlesex South well on the way. In April the districts that are organized will form a nucleus for the state auxiliary.

The report of the Committee on Cancer, asking for approval of the establishment of a cancer-detection clinic at the Palmer Memorial Hospital, was accepted, and the establishment of this clinic approved in principle. A similar request had been tabled at the October meeting of the Council. In this more comprehensive report it was explained that such a clinic would serve as a proving ground for different types of diagnostic methods and as a center where physicians might come to determine procedures applicable to the problems of their own practice.

The report of the Committee of Seven that had been appointed at the October meeting "to study the need for a full-time secretary and to define the duties of the Secretary, Director of Medical Information and Education, and the Executive Secretary of the Society" was accepted. This report recommended the employment of a full-time secretary and called for certain revisions in the by-laws of the Society that would implement the proposed changes.

Under suspension of rules, House Bill 104 introduced in the state legislature was approved. This bill designtaes the Massachusetts Department of Public Health as the agent, under the Federal Hospital Survey and Construction Act, to survey the hospital needs of the Commonwealth. Also under suspension of rules the Council adopted a resolution offered by Dr. Vlado A. Getting approving the turning over to the American Red Cross of the blood and blood-derivative program of the Commonwealth. The Red Cross voted in June, 1947, to assume this program, which has been conducted by

the Department of Public Health, on condition that the Massachusetts Medical Society approve in principle and serve, with the Department, in an advisory capacity.

THE RED CROSS NEEDS YOUR HELP

THE annual drive for the Greater Boston Red Cross Fund was launched at an opening rally held in Symphony Hall on February 25. The campaign will occupy the month of March; the Greater Boston share of the national goal of $75,000,000 is $1,440,000. These quotas have been increased from last year's goals of $60,000,000 and $1,280,000 respectively.

The increased sums of money sought reflect only the increased costs of human activities in general. The public is reminded that this year "greater sums are needed for an equal job"; despite greater emphasis on a peacetime program, the Red Cross is continuing and even expanding its work for veterans and their dependents.

Recounting past services of the Red Cross may help to remind us that they will be needed again and that this great humanitarian organization requires the nation's unfailing support.

During the past fiscal year nearly 100,000 persons received emergency help and rehabilitation in 312 disaster operations; in the first ten months of 1947 alone, disaster relief appropriations approximated $9,500,000. Financial assistance to servicemen and veterans and their families amounted to $11,944,365 for the year. To turn from dollars to hours, volunteer special services workers gave 25,000,000 of the latter.

In 1947 the American Red Cross recruited 2564 nurses to aid in the campaign against poliomyelitis; Red Cross public-health nurses made 351,600 visits, and 118,340 certificates for completion of home-nursing-service courses were issued during the year. In retrospect it is a source of satisfaction to recall that 11,230,000 certificates of proficiency in first aid have been issued since that program was instituted in 1910, and that since the program to "waterproof" America was launched in 1914, the nation's drowning rate has been halved.

The Junior Red Cross of 19,270,811 members will ship a million boxes to children overseas during the current school year; 34 nations are participating in the Junior Red Cross international school-correspondence program.

The national blood program, when completely organized, will make whole blood and its derivatives available without cost to all the people of our nation.

This is but a partial classification of the major activities of the Red Cross. To carry on with them and with its other commitments requires the continued support that has always so gladly been given.

ROBERT NASON NYE MEMORIAL STUDY

THE Massachusetts Division of the American Cancer Society has voted a grant to the Massachusetts General Hospital of approximately $2500 for a particular purpose. The sum thus appropriated represents the money so generously donated in memory of the late Dr. Robert N. Nye. The purpose is to initiate and at least partly support the Robert Nason Nye Memorial Study.

This study, a long-desired project of the X-ray Department of the Massachusetts General Hospital, where Dr. Nye served his internship, is concerned with the evaluation of changes in the peripheral blood correlated with known amounts of exposure to radiation sustained by the employees and staff of the X-ray Department. Among other matters to be studied is the incidence of leukemia among such workers.

The study will be under the supervision of Dr. Laurence L. Robbins, roentgenologist of the Hospital, with the assistance of Dr. Francis M. Hunter, of the Clinical Laboratory, and in consultation with Dr. John G. Trump, of the Massachusetts Institute of Technology.

MASSACHUSETTS MEDICAL SOCIETY

BLUE CROSS ENROLLMENT

The following letter explains the present situation regarding enrollment in Blue Cross of members of the Massachusetts Medical Society. Blue Cross has already discontinued the practice of allowing enrollments on the first of each month and adopted the policy of permitting them only once a year at the time of a general reopening for all nonsubscribing members. August had been suggested as a convenient month for this reopening.

H. QUIMBY GALLUPE
Secretary

February 6, 1948

Mr. Robert St. B. Boyd, Executive Secretary
Massachusetts Medical Society
8 Fenway
Boston 15, Massachusetts

Dear Mr. Boyd:

I regret to state now that it is impossible for me to tell you whether or not August may be the re-opening date for your group and it is difficult for me to say at this time whether or not there will be another opportunity for members of the Medical Society to join the Blue Cross Plan.

Please understand that this is due only to a complete change in our methods of enrollment and every effort is going to be made to satisfy groups such as yours which were enrolled on Direct Payment. I have taken this matter up with Mr. Cunningham and he has told me that your group will be discussed shortly as to whether re-openings will be allowed in such groups.

Please be advised that as soon as possible I will let you know whether or not your group may be re-opened, if so, what month will be preferable and also the necesasry number of applicants to be secured at that time.

I am sorry that I am not in a position to give you complete information for presentation in your *Journal* as I know that was your desire but you will realize that we are in a very difficult position at this particular time due to the high incidence of hospitalization and the many changes now being made of necessity have left us with many unsolved problems.

I will notify you just as soon as possible.

JOHN H. MCLAUGHLIN
Enrollment Representative

Massachusetts Hospital Service Inc.
Massachusetts Medical Service
38 Chauncy Street
Boston

NEW HAMPSHIRE MEDICAL SOCIETY

DEATHS

CHENEY — Harry A. Cheney, M.D., of Campton, died on July 15. He was in his seventy-seventh year.

Dr. Cheney received his degree from University of Vermont College of Medicine in 1894. He was a member of the staff of the Sceva Speare Memorial Hospital in Plymouth.

HUCKINS — Thion H. Huckins, M.D., of Tilton, died on January 3. He was in his seventy-fifth year.

Dr. Huckins received his degree from Dartmouth Medical School in 1902. He was a member of the staff of Franklin Hospital.

His widow, a son and a brother survive.

SULLIVAN — Daniel J. Sullivan, M.D., of Manchester, died on December 16. He was in his fifty-sixth year.

Dr. Sullivan received his degree from Tufts College Medical School in 1916. He was formerly chief of the surgical staff of Sacred Heart Hospital and surgeon on the staff of Hillsborough County General Hospital. He was secretary of the New England Regional Committee of Fractures and was a fellow of the American Medical Association.

His widow, two sons, two daughters and a sister survive.

A HUNDRED YEARS AGO

The Counsellors of the Mass. Medical Society will meet at their rooms in the Masonic Temple, Tremont st., at 11 o'clock in the morning of February 2. Business matters of peculiar interest will be acted upon, and it is therefore desirable that gentlemen should be in their seats at the specified hour. — A melancholy interest is connected with the sudden and suicidal death of Dr. Horace Wells, from the circumstance of his name being associated with the discovery of the inhalation of gases to overcome consciousness in surgical operations. He labored incessantly to establish his claim to the honor of discovery, and certainly produced a mass of testimony that convinced many that his researches, experiments, and suggestions influenced others to proceed in a course of investigation, that finally led to the triumphant discovery of the anaesthetic properties of sulphuric ether, and subsequently, under the clear-sighted exertions of Dr. Simpson, of Edinburgh, of the same surprising qualities in chloroform. — Messrs. W. B. Little and Co., Hanover street, Boston, are manufacturing this new agent in large quantities. Much of it is packed up in phials small enough to be carried in a vest pocket, and secured at the cork in a manner to prevent loss by evaporation. Dr. C. T. Jackson, the chemist, whose reputation is as extensive as the boundaries of Science, speaks with entire confidence of the purity and excellence of Mr. Little's chloroform for all the purposes for which it may be required. The demand for it almost exceeds belief — and we are almost disposed to ask under what circumstances it can all be used. — A bill has been before the legislature of New York, which proposes a fine of $25 for selling adulterated drugs and medicines, if known to be such, and the same fine where the ingredients of a compound are not stated on the label, in legible English, but it was finally lost by a decisive vote. — 140 students are in attendance on the Medical lectures in Harvard University, the present season. — At Bellevue Hospital, out of 600 patients there are said to be over 200 of Typhus Fever, while three of the Assistant Physicians are sick of the fever, and two others but just recovering from an attack. — Extracted from the *Boston Medical and Surgical Journal*, February, 1848.

R. F.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

THE COMMONWEALTH'S RHEUMATIC-FEVER PROGRAM

Several hundreds of children in Massachusetts are victims of rheumatic fever each year. Some of these children will be crippled or handicapped by this disease; others, without actual cardiac damage from a first attack, will need protection from further attacks. The second group is particularly important in the field of preventive medicine, and efforts should be directed toward provision of the most healthful living conditions possible. General health supervision and regular medical examinations will help to forestall the development of the more serious infections.

Another important part of a rheumatic-fever program is to make a definite diagnosis of the child

who has questionable heart disease and to interpret to the family just what degree of activity is possible. Unnecessary limitation of a child's life may be as detrimental to his future as too great physical effort. His possibilities as a self-supporting and useful citizen should be considered in any plan for care and aid to the child with rheumatic heart disease.

The Massachusetts Rheumatic Fever Program is offering in the Northeastern Health District diagnostic and consultative service, as well as complete clinic care, follow-up study and hospitalization when needed, for patients under twenty-one years of age. Further information and application blanks can be obtained from the District Health Office, 367 Main Street, Wakefield. (Telephone, CRystal 9-1118.)

MISCELLANY

NOTE

The following appointments to the teaching staff of Harvard Medical School were recently announced: Keith Merrill, Jr., of Herndon, Virginia (A.B. Yale University 1940; M.D. Harvard University 1944), research fellow in surgery; Peter Howard Nash, of Kent, England (B.A. Cambridge 1938; M.A. Cambridge 1945; M.B.B.Chir. Cambridge 1941; D.P.H. London 1947), research fellow in medicine; John Robertson Sinton, of London, England (M.B., B.Surg. London University 1944; M.R.C.P., Royal College of Physicians of London 1946), research fellow in medicine; Robert John Walsh, of New South Wales, Australia (M.B. University of Sydney 1939; B.S. University of Sydney 1939), research fellow in medicine; Daniel Sumner Ellis, of Cambridge (M.D. Harvard University 1939), assistant in medicine; William Burton Ayre, of Montreal, Canada (B.A. University of Alberta 1938; M.D. University of Alberta 1943), research fellow in medicine; Donald Harting, of Cambridge (S.B. Harvard University 1943; M.D. Harvard University 1946), research fellow in pediatrics; Lytt Irvine Gardner, of Cambridge (A.B. University of North Carolina 1938; M.A. University of North Carolina 1940; M.D. Harvard University 1943), research fellow in pediatrics; and John Martin Weller, of Oak Park, Illinois (A.B. University of Michigan 1940; M.D. Harvard University 1943), teaching fellow in biologic chemistry.

NEW MEDICAL DIRECTOR, UNITED STATES VETERANS ADMINISTRATION

Dr. Paul B. Magnuson, prominent orthopedic surgeon and closely identified with the reorganization of medical care in Veterans Administration hospitals, has been named chief medical director for the United States Veterans Administration.

Dr. Magnuson, former professor of surgery and chairman of the Department of Bone and Joint Surgery at Northwestern University Medical School, succeeds Dr. Paul R. Hawley, who resigned on January 1 as medical chief and who now is serving as special assistant and adviser on medical problems.

NEW YORK TUBERCULOSIS AND HEALTH ASSOCIATION

Dr. Kendall Emerson was elected president of the New York Tuberculosis and Health Association at the annual meeting held in the Association's headquarters, 386 Fourth Avenue, Manhattan, on January 27. All other officers were re-elected, and two new members were elected to the Board of Directors.

The new Board members are Dr. Norman Plummer, medical director of the New York Telephone Company, and Dr. William Hunter Stearns, associate visiting physician, Chest Service, Bellevue Hospital, and instructor in medicine, College of Physicians and Surgeons, Columbia University.

Dr. Emerson, who was a charter member of the American College of Surgeons, was managing director of the National Tuberculosis Association for nineteen years until his retirement on December 31, 1947. He began his career as an orthopedic and general surgeon in Worcester, Massachusetts, and from 1923 to 1928 was chief of surgical services in the Worcester Memorial Hospital. In World War I he served with the British forces in the Royal Army Medical Corps from 1916 to 1918, and with the United States Army Medical Corps from 1918 to 1919. He was deputy commissioner and medical director for Europe for the American Red Cross during 1920-1921.

The annual health conference of the Association will be held in the Hotel Pennsylvania, New York City, on March 9.

LASKER FOUNDATION AWARD

Dr. John Rock, of Boston, received on January 27, 1948, the Lasker Foundation Award and medallion from the Planned Parenthood Federation of America. The award was made because of his investigations into the causes and cure of sterility.

NATIONAL BLOOD PROGRAM

The American Red Cross has announced the appointment of Dr. Louis K. Diamond, assistant professor of pediatrics at Harvard Medical School, as technical director of the National Blood Program. Dr. Diamond is also director of the Boston Children's Hospital Blood Bank and Research Laboratory, director of the Blood Grouping Laboratory of Boston and consultant in pediatric hematology at the Massachusetts General Hospital.

The most recently opened donor center in the $10,000,000 chain has been established at Stockton, California.

EFFECT OF WAR ON CHILDREN

Award of a $20,000 research grant to the International Committee on Mental Hygiene under the National Mental Health Act was recently announced.

The grant will be used under the direction of Dr. David Levy, professor of psychiatry, Columbia University College of Physicians and Surgeons, for a study of the effect of war on children. It will be presented at the International Congress on Mental Health, to be held in London in August.

MENTAL HEALTH CLINIC

The first United States Public Health Service demonstration mental-health clinic has been opened in Prince Georges County, Maryland. The clinic will be operated jointly by the Maryland State Department of Health and the Public Health Service, with federal funds under the National Mental Health Act. Forty thousand dollars has been appropriated for the fiscal year 1948.

The clinic is under the direction of Dr. Mabel Ross, child psychiatrist formerly with the Johns Hopkins Hospital. Psychiatric service is offered to all residents of Prince Georges County, which has a population of 140,000.

CORRESPONDENCE

OLD SPANISH SWINDLE IN NEW FORM

To the Editor: A communication from the acting inspector in charge, Post Office Department, Boston, is transmitted herewith for publication in the *Journal*, since the fraud described applies to physicians, as well as to dentists and members of other professions. The letter is as follows:

The following information is respectfully offered as material for inclusion in a forthcoming issue of the *New England Journal of Medicine*.

Tennyson Jefferson, post office inspector in charge, Boston, estimates that over a thousand Spanish-prisoner swindle letters have been mailed recently at Mexico City, Mexico, addressed to doctors, dentists and others through-

out New England. The operators of the revived swindle appear to be using names and addresses selected from publications such as *Who's Who in America* and those listing the names of doctors and dentists.

Jefferson, who has personally investigated most of the major foreign lotteries and frauds during the past decade, explained that these prisoner letters are allegedly mailed by a man imprisoned in Mexico for bankruptcy. The prisoner states in his letter that he needs only a few thousand dollars to lift an embargo on his trunk, containing $375,000.00 in United States currency and held in a customhouse in the United States. One third of this money, or $125,000.00, is offered to the addressee of the letter if he will come to Mexico with $2,000.00 in cash to aid the prisoner. As evidence of good faith the prisoner also offers to place his "dear daughter" under the protection of the man to whom the letter is addressed.

He described the swindle as one of the oldest in existence, having originated in Spain many years ago. Its headquarters were moved to Mexico around 1900. Information furnished to the Post Office Inspection Service shows that many old family archives contain Spanish-prisoner letters received before the turn of the present century. Jefferson remarked: "Incredible as it may seem, during the years that this swindle has operated the number of Americans gullible enough to respond with cash to its promise of easy money has been sufficient to keep it alive. These swindlers are currently seeking a new crop of post war victims."

Inspector in Charge Jefferson requests those who receive Spanish prisoner letters to mail or bring them promptly to his office in the Federal Building, Boston, so that United States mail addressed to the swindlers may be identified therefrom and held under postal fraud orders.

A. G. Lagace
Acting Inspector in Charge

Inspection Service
Post Office Department
Boston Division

H. Quimby Gallupe, M.D.
Secretary

Massachusetts Medical Society

NOTICES

ANNOUNCEMENT

Drs. Edward L. Young, Walter E. Garrey, Walter E. Wilson, Jr., and Howard M. Trafton announce the removal of their offices to 1180 Beacon Street, Brookline.

HARVARD MEDICAL SOCIETY

A meeting of the Harvard Medical Society will be held in the amphitheater of Building D, Harvard Medical School, on Tuesday, March 9. A symposium on virus diseases will be presented.

Program

Afternoon (4:30 to 6:30):

Max Bovarnick, M.D. Chemical Nature of the Virus Receptors in Red Cells.

John C. Snyder, M.D. Chemotherapy of Rickettsial Diseases.

Herbert R. Morgan, M.D. Experiments on Chemotherapy with Agents of the Psittacosis Lymphogranuloma Group.

Charles A. Janeway, M.D. The Effect of Measles on the Nephrotic Syndrome.

Supper in Vanderbilt Hall at 6:30 p.m.

Evening (8:00 to 10:00):

John F. Enders, Ph.D. Mumps.

Maxwell Finland, M.D. Influenza.

F. S. Cheever, M.D. Epidemic Diarrhea of Suckling Mice.

Robert Rustigian, Ph.D. Studies on Immunity of Theiler's Virus.

Subsequent meetings will be held on April 13 and May 11.

NEW ENGLAND SOCIETY OF ANESTHESIOLOGISTS

A meeting of the New England Society of Anesthesiologists will be held in the Bigelow Amphitheater of the White Building, Massachusetts General Hospital, on Tuesday, March 9, at 8 p.m. Dr. Ralph M. Tovell's group will present the following program:

The Physiologic Basis for Resuscitation of the Newborn. Dr. David M. Little, Jr.

Cardiovascular Collapse During Subarachnoid Block: Recovery following administration of procaine. Dr. Robert R. Cross.

Treatment of Cardiovascular Emergencies during Anesthesia: Case report. Dr. Harvey F. Dritz.

Proved Ventricular Fibrillation during General Anesthesia with Complete Recovery. Dr. R. Starr Lampson.

Physicians and medical students are also invited to attend a meeting of the Anesthesia Study Commission to be held at Boston University School of Medicine on Tuesday, March 30, at 8 p.m. Three interesting cases are to be presented. Guest discussants will review the cases.

AMERICAN HOSPITAL ASSOCIATION

The fiftieth-anniversary convention of the American Hospital Association will be held in Atlantic City, New Jersey, from September 20 to 23, with headquarters at the Traymore Hotel and with meetings and exhibits at the Atlantic City Convention Hall.

The program, which is devoted to the subject "Hospitals — Vital to Better Living," will consist of morning and afternoon sessions concerned with important issues and problems of the care of patients and of hospital finances, as well as the role of the hospital in community life and the challenge to hospitals. Special events will include the sessions of the House of Delegates, an informal reception followed by a buffet dinner and the annual banquet. Commercial and educational exhibits will be conducted.

SOCIETY MEETINGS AND CONFERENCES

Calendar of Boston District for the Week Beginning Thursday, March 4

Thursday, March 4

12:00 p.m. Clinicopathological Conference. Nurses Home, Allerton Hospital, Brookline.

Friday, March 5.

*10:00 a.m.–12:00 m. Medical Staff Rounds. Peter Bent Brigham Hospital.

Monday, March 8

12:00 m. Clinicopathological Conference. Margaret Jewett Hall, Mt. Auburn Hospital, Cambridge.

*12:15–1:15 p.m. Clinicopathological Conference. Peter Bent Brigham Hospital.

Tuesday, March 9

*12:15–1:15 p.m. Clinicoroentgenological Conference. Peter Bent Brigham Hospital.

*1:30–2:30 p.m. Pediatric Rounds. Burnham Memorial Hospital for Children, Massachusetts General Hospital.

4:30 p.m. Harvard Medical Society. Amphitheater of Building D, Harvard Medical School.

8:00 p.m. New England Society of Anesthesiologists. Bigelow Amphitheater of the White Building, Massachusetts General Hospital.

Wednesday, March 10

*12:00 m. Grand Rounds and Clinicopathological Conference (Children's Hospital). Amphitheater, Peter Bent Brigham Hospital.

*2:00–3:00 p.m. Combined Clinic by the Medical, Surgical and Orthopedic Services. Amphitheater, Children's Hospital.

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*Open to the medical profession.

January–April. Thirteenth Postgraduate Seminar in Neurology and Psychiatry. Metropolitan State Hospital. Page 348, issue of August 28.

March 1. New England Heart Association. Page 278, issue of February 19.

March 9. Harvard Medical Society. Notice above.

March 9. New England Society of Anesthesiologists. Notice above.

(*Notices continued on page xv*)